

MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL
RAILROAD & FINANCIAL NEWSPAPER.

MONTHLY EDITION OF THE MANUFACTURERS' RECORD.

Commencing with the issue of October 7, the first issue of the MANUFACTURERS' RECORD in each month will be made a special monthly number of greater than usual size and more than ordinary interest. It is our purpose to present in each monthly issue special features of interest, such as the extended treatment of some leading Southern industry or the discussion of various phases of Southern conditions. The completeness and interest of our regular weekly issues will not be sacrificed in any manner on this account, but will be fully maintained.

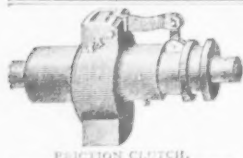
The monthly edition will be of especial interest to those who have not the time to follow Southern matters as they are fully presented in our regular weekly issues. The price of the monthly issue will be One Dollar per year.

THE FULL TABLE OF CONTENTS WILL BE FOUND ON PAGE 100.

VOL. XXII.
No. 5.

\$4.00 per year.
Single Copy
10 Cents.

Baltimore, September 2, 1892.



FRICTION CLUTCH.

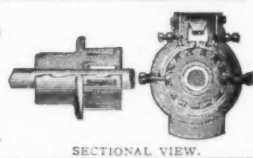
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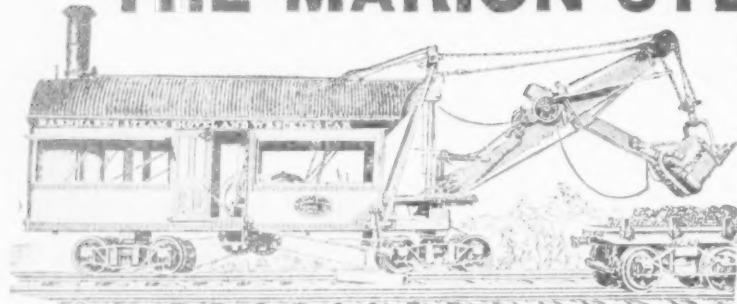
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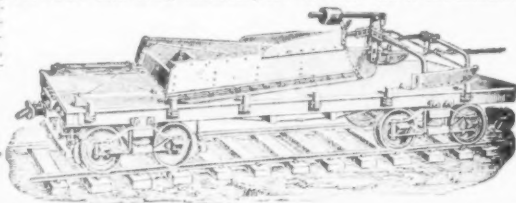


Barnhart's Steam Shovels, Dredges, Ditching Dredges, Railroad Ditchers, Wreckers, Ballast Unloaders, &c. Our Steam Shovels are largely used on Railroads and by Contractors, Brick Manufacturers, and in excavating Iron Ore, Handling Stock Ore, Stripping Coal Fields and Stone Quarries, and are a most desirable machine for any use where excavating machinery can be used. All of our machines are guaranteed to give entire satisfaction; otherwise may be returned at our expense. For illustrated Catalogue, Photographs, and any further information desired, address

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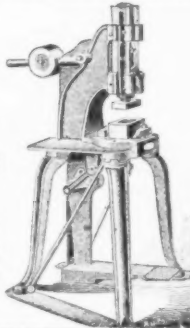


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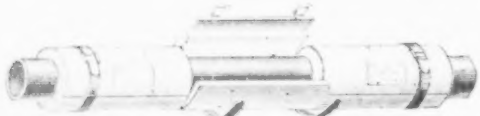
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CLASSIFIED INDEX OF ADVERTISERS.

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Acid Chambers.

Charleston Lead Co., Charleston, S. C.

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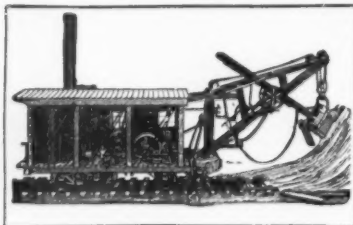
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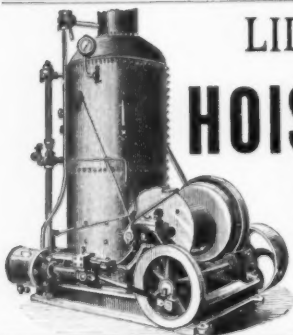
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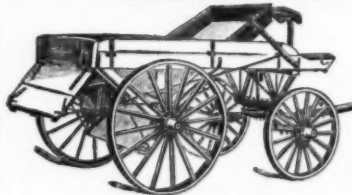
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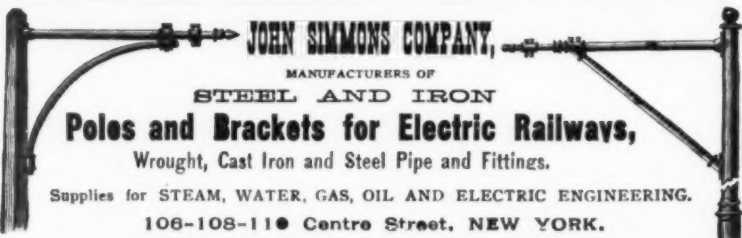
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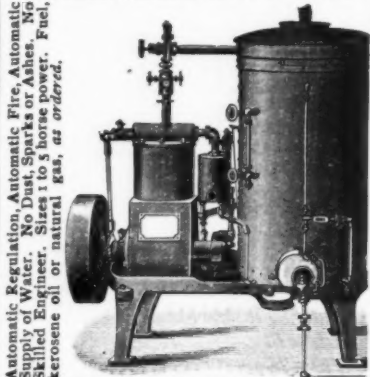
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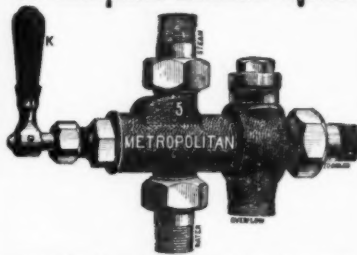
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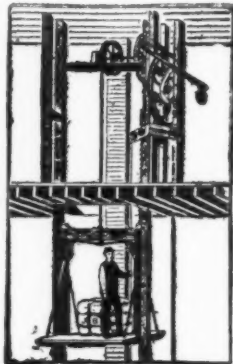
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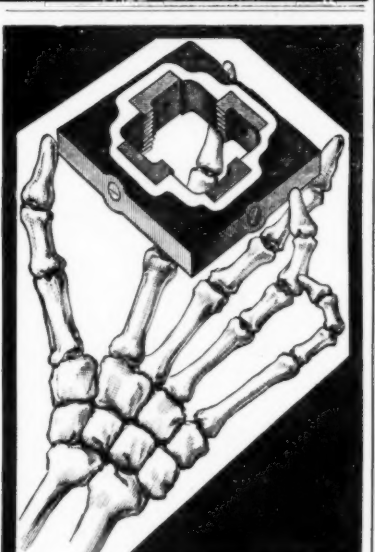
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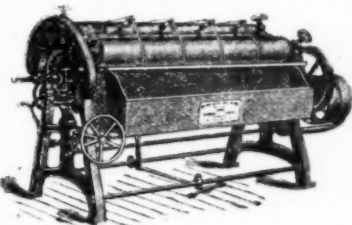
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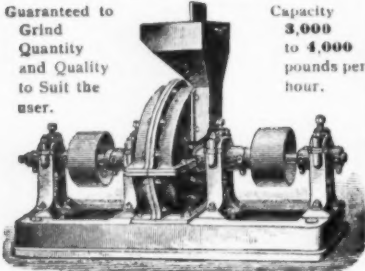
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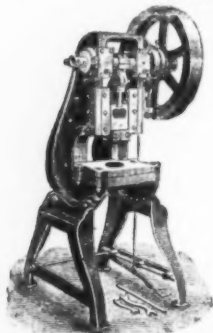
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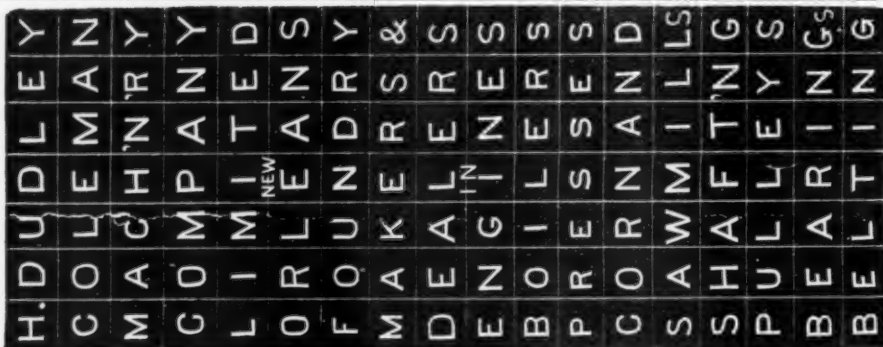
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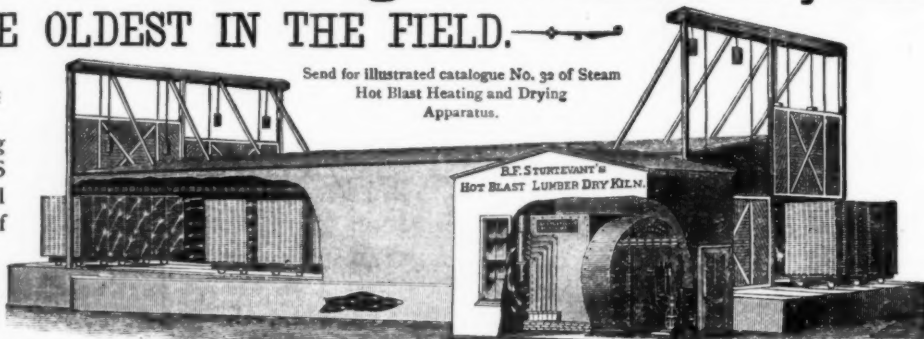
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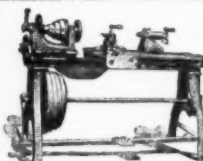
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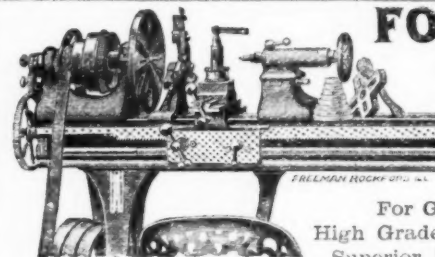
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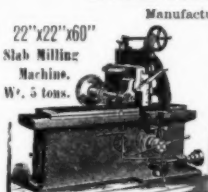

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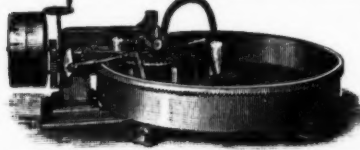
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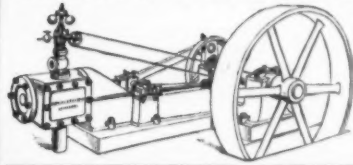
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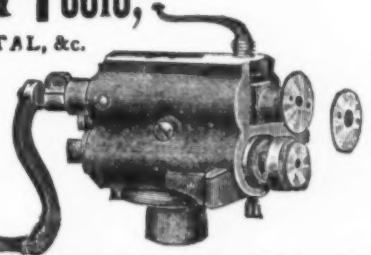
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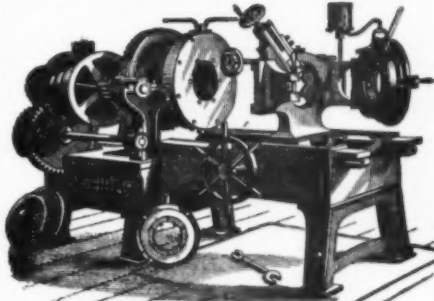
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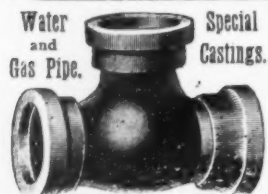
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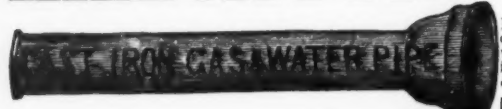
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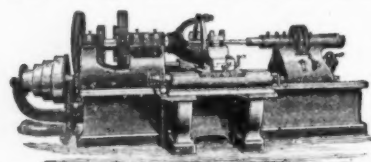
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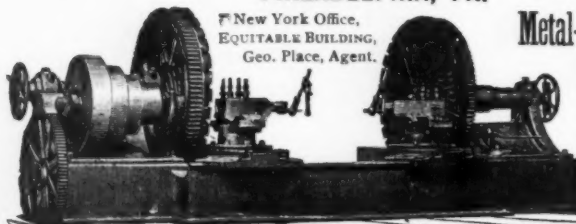
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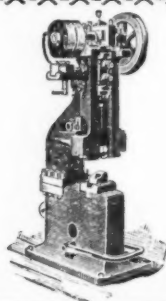
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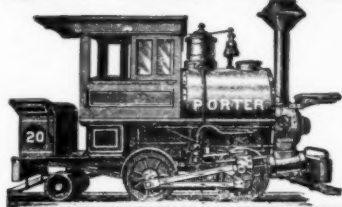
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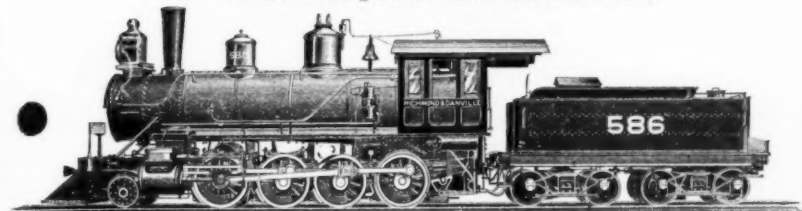
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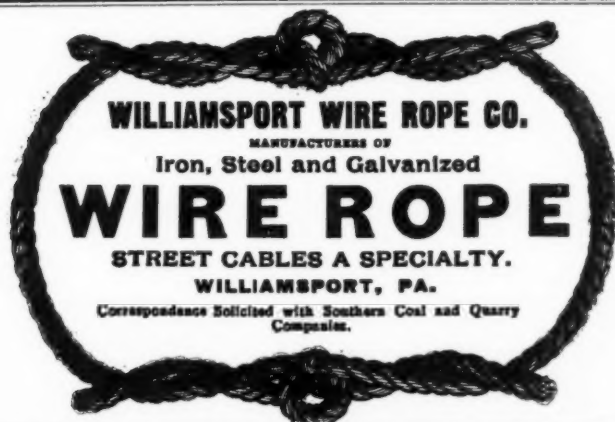
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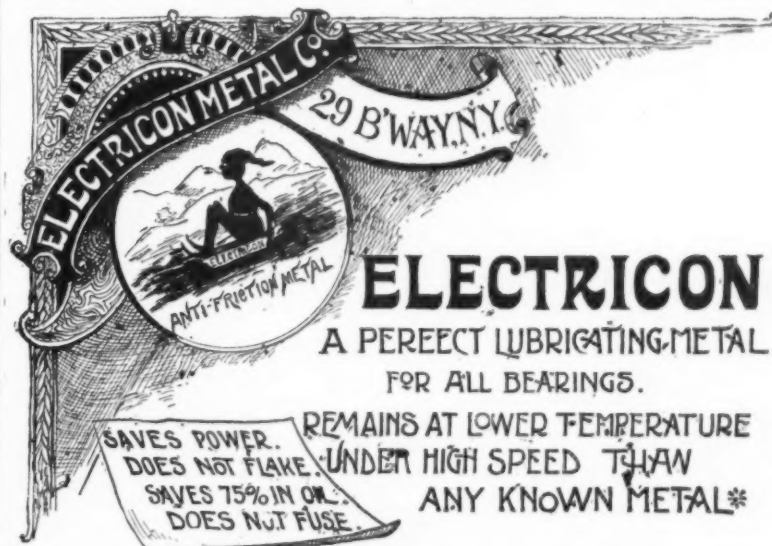
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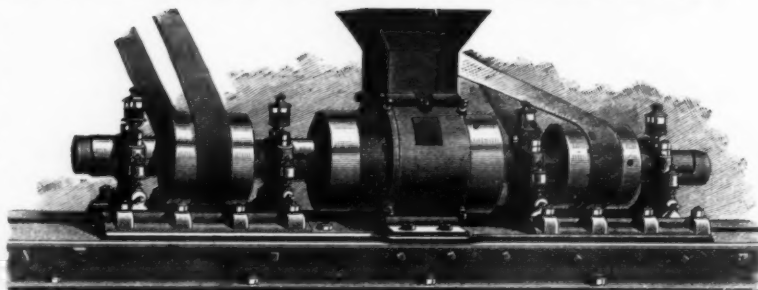
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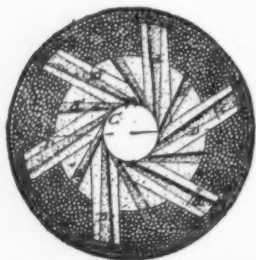
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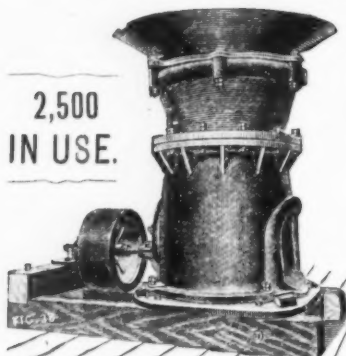
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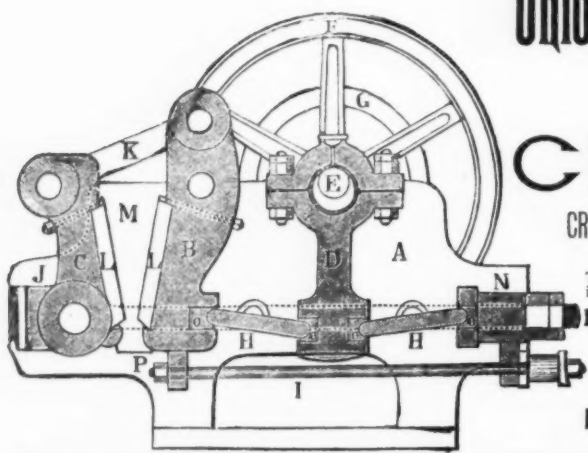
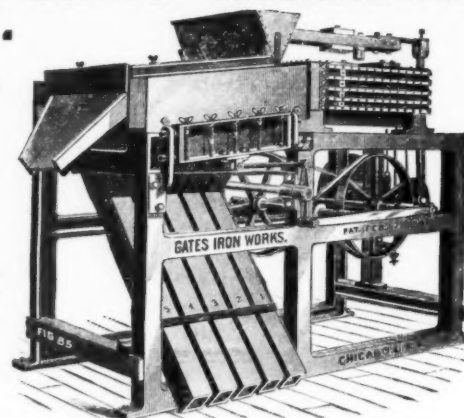
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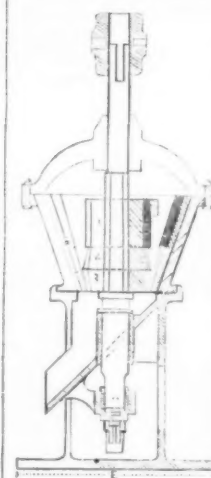
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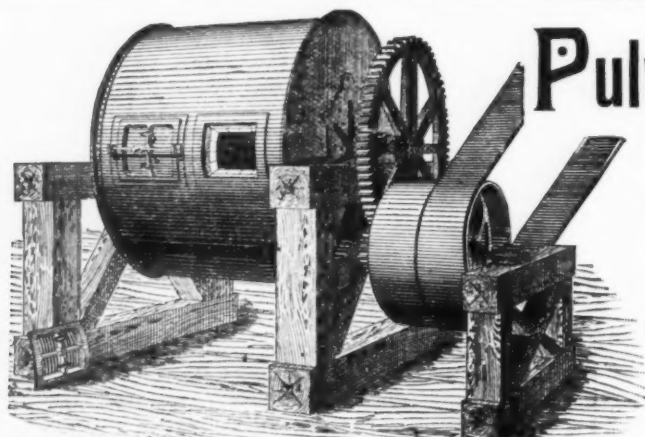
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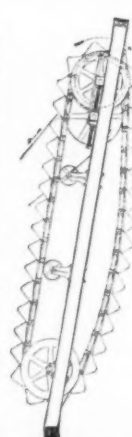
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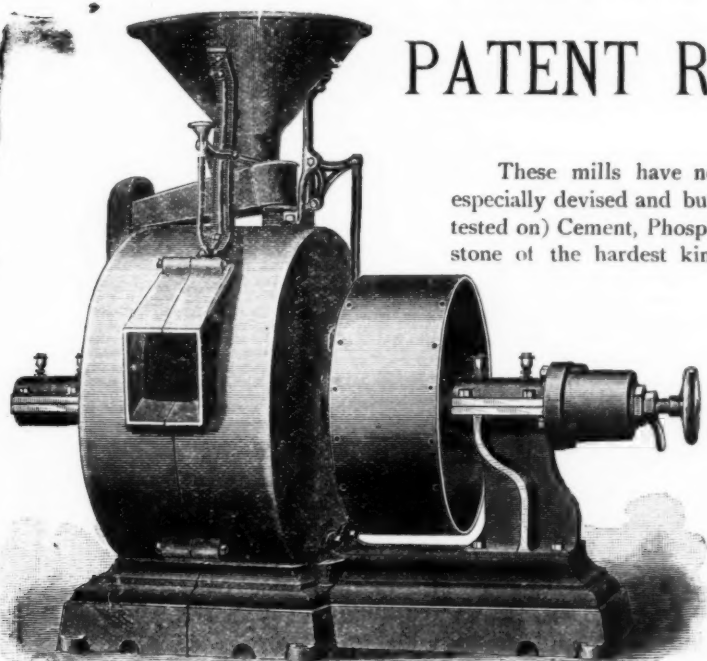


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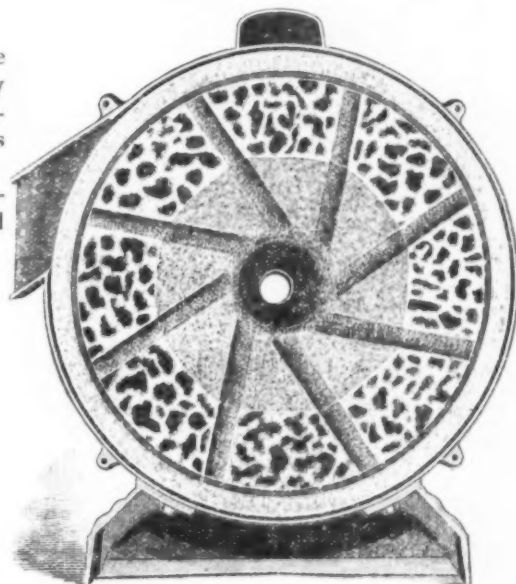
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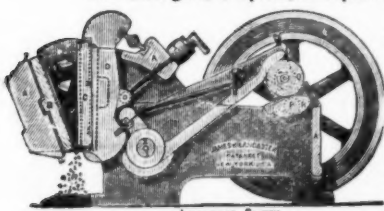
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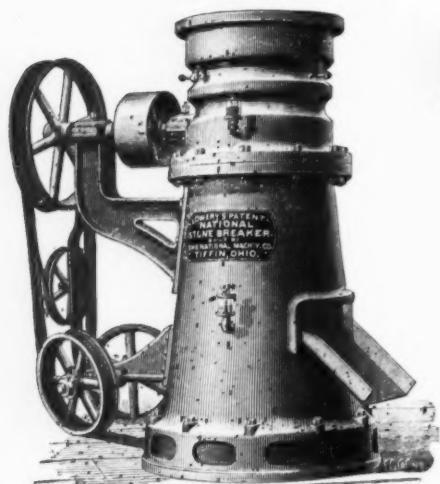
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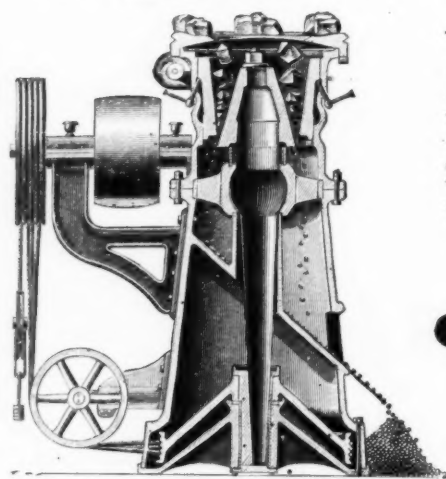
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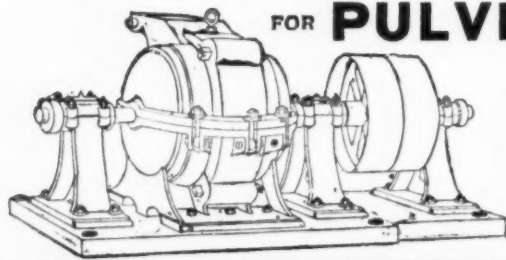
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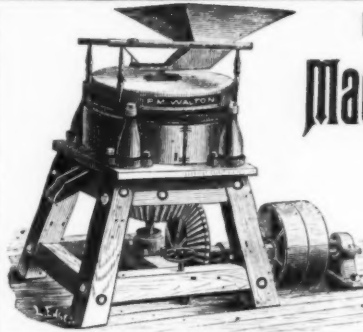
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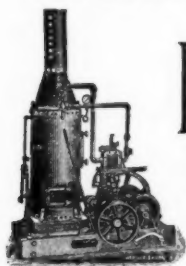
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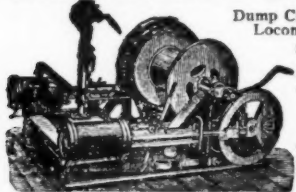
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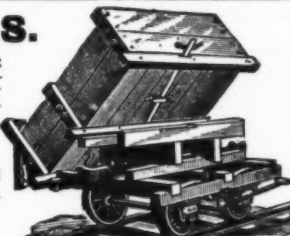
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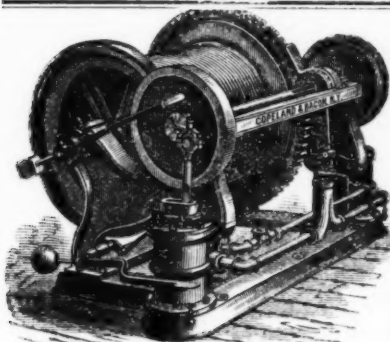


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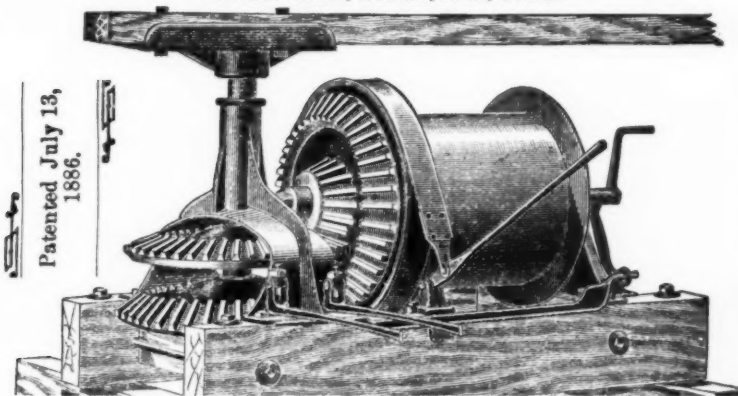
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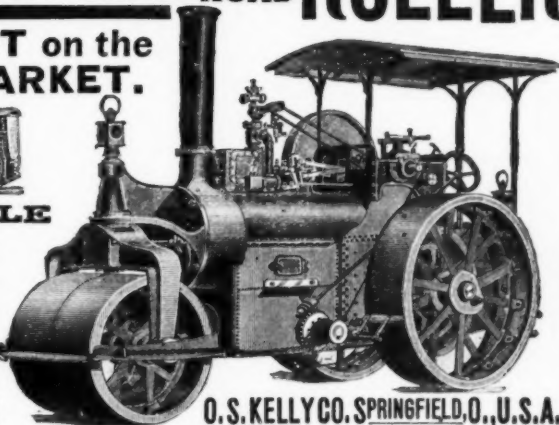
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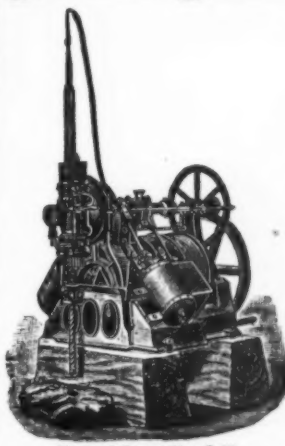
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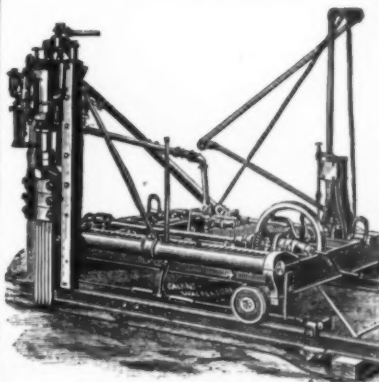
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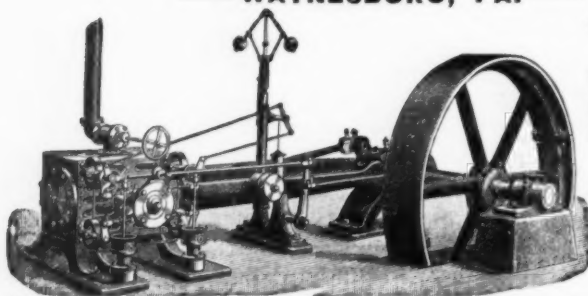
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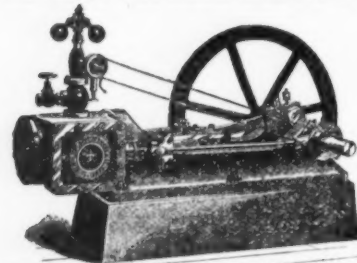
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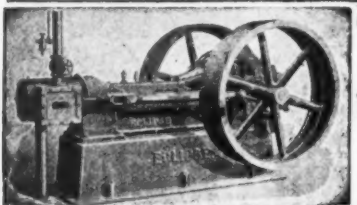
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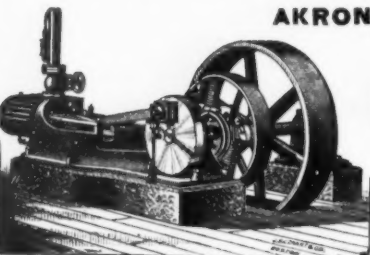
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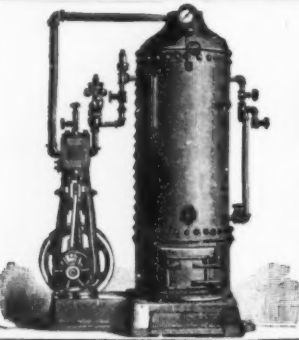
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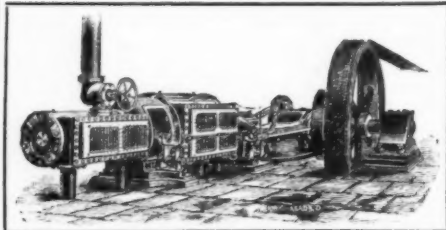
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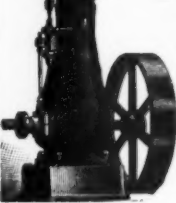
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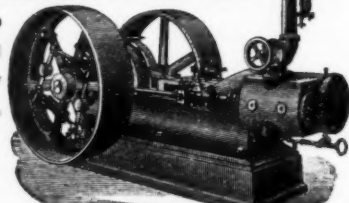
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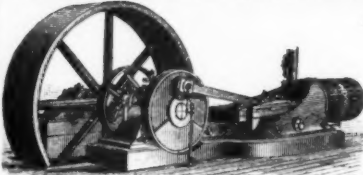
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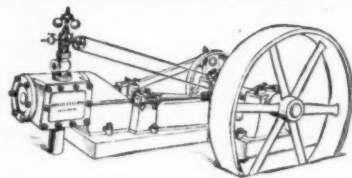


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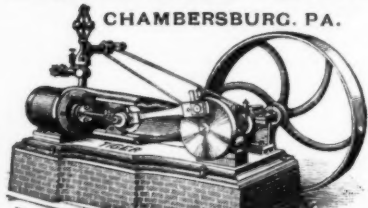
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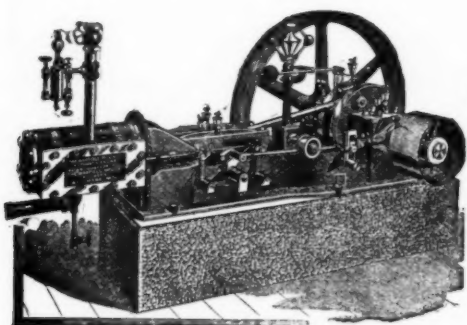
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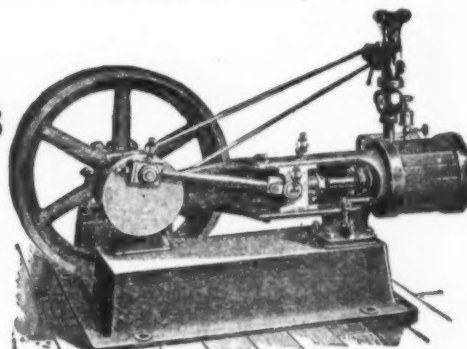
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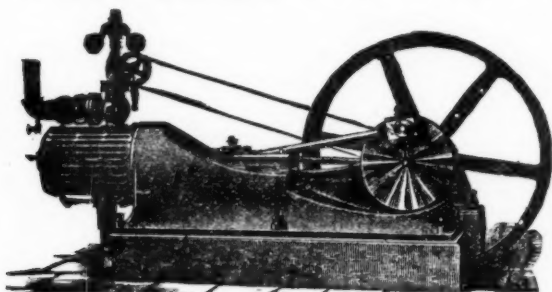
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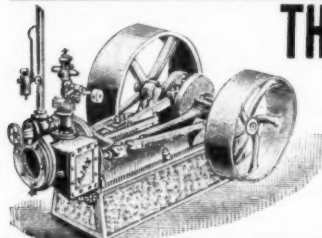
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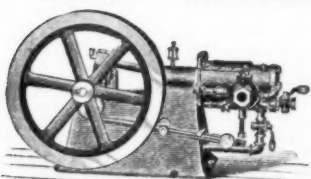
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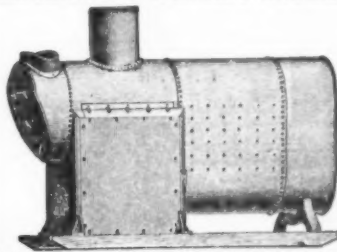
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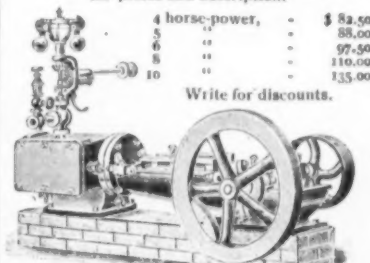
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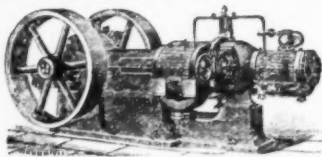
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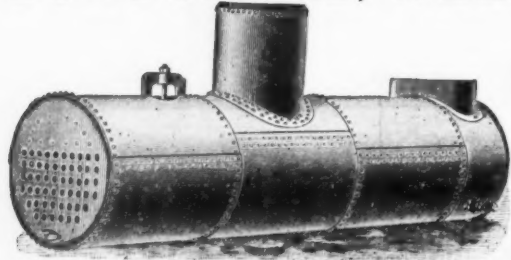
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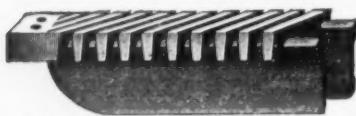
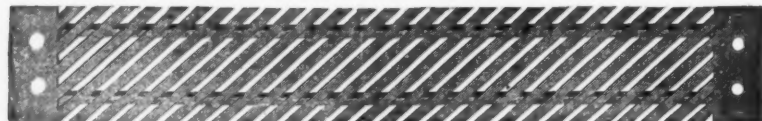
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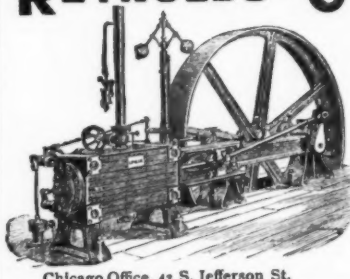
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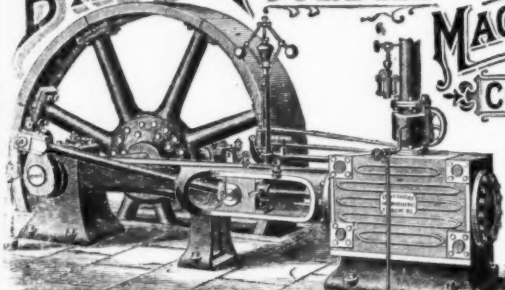
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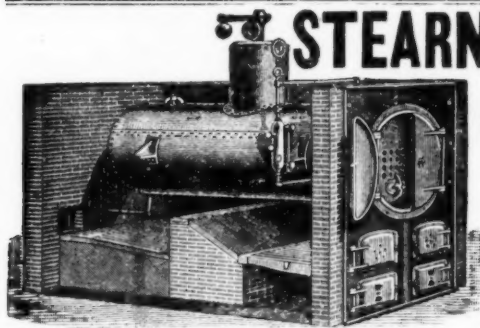
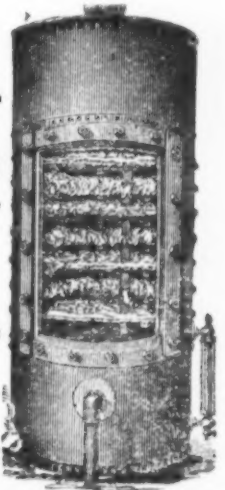
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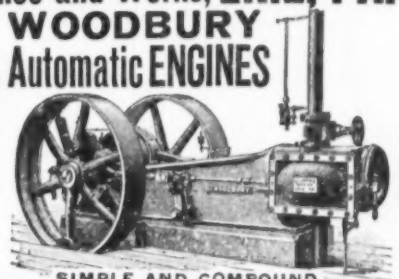


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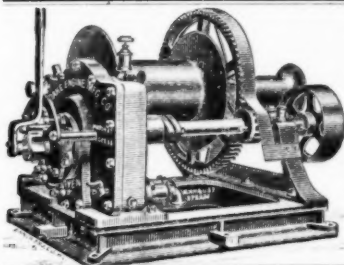
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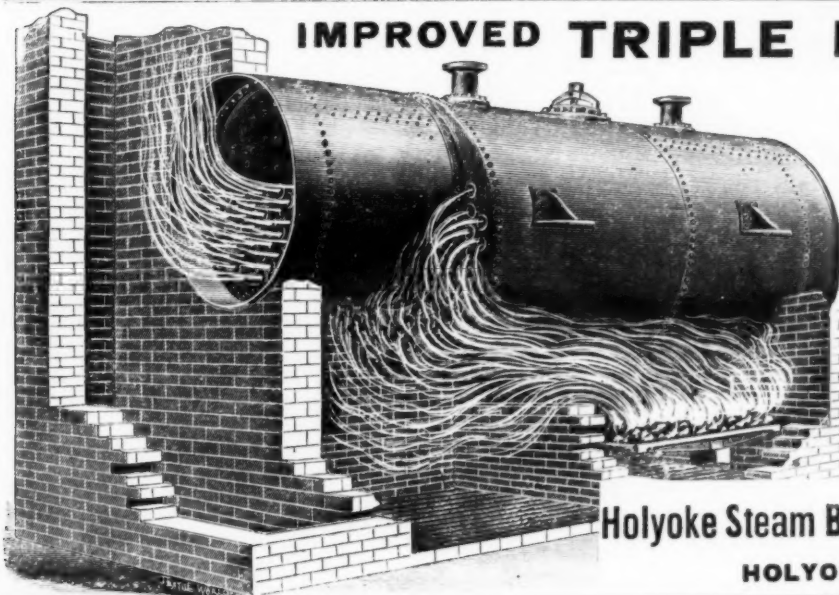
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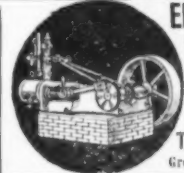
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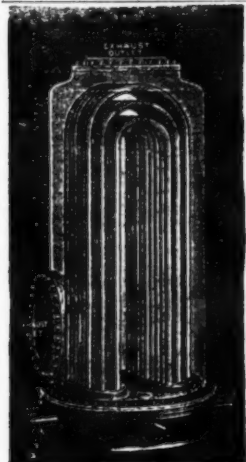
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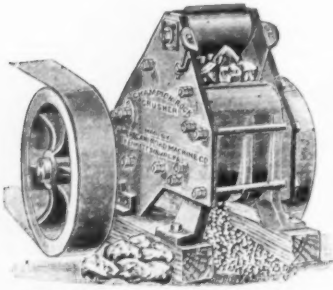
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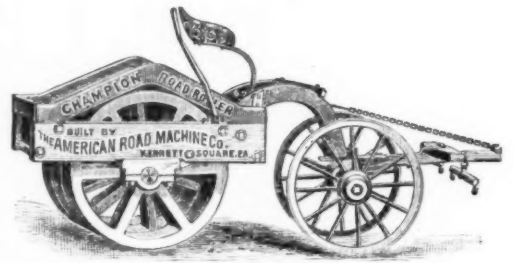
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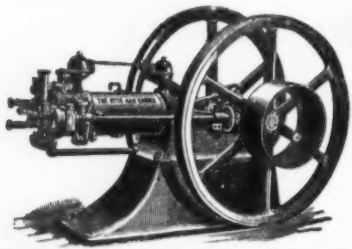
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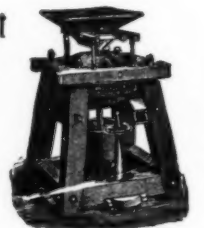
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BALTIMORE, SEPTEMBER 2, 1892.

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Florida Phosphates: Their Influence Abroad and Results at Home.

By C. C. Hoyer Millar.

A very great deal has been both said and written about the ability of the raisers of Florida phosphate to dictate the prices of this important product to the world, and the object of the present article is to investigate the influence of Florida phosphate on the market and to examine the practical results realized.

At the time when the discovery of the phosphate deposits in Florida became public property the prices of all phosphates were at an abnormally high figure, which had resulted from the demand being apparently in excess of the possible supply. We use the word "apparently," for it is a fact which must be patent to anyone who is cognizant of the various phosphate deposits which are now being worked or have been worked in past years, that the question of available supply is ruled by the price obtained for the product; or, in other words, that each consecutive rise in price would bring so many more deposits or mines into the producing arena.

The price of phosphate at the juncture in question was so high that the margin for profits to be derived from the exploitation of the newly discovered deposits in Florida seemed so lucrative and so sure as to attract the serious attention of every class of investor and speculator. The inevitable boom, which in this instance was most immoderate (for phosphate is not like gold and does not have an unlimited outlet, as the newspapers and promoters would have the public believe), followed very quickly on the heels of the discoveries, and nearly 300 companies were floated within fifteen months.

The next move after the formation of all these companies was to make extravagant offers of the expected yield from the mines. Unfortunately for the investors, by far the larger number of companies were under the management of men whose mining experience was practically nil, and whose knowledge of the phosphate market, its requirements and its usages, was, so to speak, still less, for the fact of mining large quantities of phosphate does not carry with it the ability of finding a market for the product.

How grotesque many of these offers were in reality only those who have visited Florida can thoroughly appreciate, for, incredible as it may seem, many of the would-be miners of hard rock were offering phosphate for early delivery by tens of thousands of tons before the first spadefull of earth had been removed or the mining outfit even ordered.

The result of the numerous offers in the European market was to check all active buying, for although no one could take a serious view of the random offers showered in by every mail, yet it was at once evident that there was an important new factor in the market, and that these deposits in Florida were likely to produce large quantities of various grades of phosphate.

When the first few shipments of hard rock were followed by the rash sales made by one company, which has since collapsed, at any figures offered by the European buyers, prices fell at once to a

range never previously touched for high-grade material, and considerable buying took place. The bottom, however, had not yet been reached, for during last summer and autumn certain quantities of phosphate, not large in themselves, but more serious from the ruinous way in which they were offered and marketed, were simply thrown upon the market, until at last as low a price as 8½¢ per unit c. i. f. Europe was accepted by the sellers, who in many cases had come to the end of their financial resources and were compelled to realize at any figure.

The miners in the Somme department of France, finding their profits cut down to a very low figure, wisely drew in their horns and ceased their export trade to Sweden, Northern Germany and the United Kingdom, and contented themselves with supplying their home market and those points in Belgium and on the Rhine where Florida could not compete so advantageously as at the seaports.

Canadian miners were forced to suspend operations entirely, and Aruba phosphate was practically held off the market, the shortage of high-grade phosphate created thereby being filled up by the shipments of Florida hard rock.

It is a mistake to suppose that last year's shipments of high grade material from all sources were in excess of the requirements of the market, for this is not the fact, and the stupendous fall in prices was brought about not by excessive supplies but by the extraordinarily foolish and unbusiness-like manner in which the product of the Florida hard rock mines was marketed in Europe.

With the example of the hard rock miners in view, it is surprising that history repeated itself in the case of the miners of Florida river pebble, who had maintained their prices firmly during the whole of last year. It is nevertheless the fact that although in January last meetings were held with a view of keeping up prices and holding together, a few months later found the Florida river miners cutting against one another at a ruinous rate, until the price had dropped from 10¢ to 7½¢ per unit. That large quantities were disposed of thereby is highly improbable, as in view of these ever cheapening offers the miners in South Carolina lost no time in following the downward course, and dropped their prices to 7½¢ for Europe, the local price being reduced from \$7.50 to \$5.00 and even \$4.50 per ton. It is only right to state that the home market in the United States had in the meantime become very weak owing to the low prices realized for last season's cotton crop, but it is beyond doubt that such a drop in price as took place could very easily have been prevented.

Now the question of importance to all those financially interested in Florida phosphate mining is whether the prices realized have resulted in satisfactory returns being made on the capital invested.

We will deal first with the hard rock mining industry. After careful enquiries made on all sides we are unable to find that any of the golden hopes in which the enterprises were started have been realized by the distribution of fat dividends, and, as far as we can ascertain, only two companies have declared any dividends at all. On the other hand, it is well known that

many of the companies have been worked at a ruinous loss. Numerous undertakings have been closed down and abandoned as failures, and it is only a question of time with many of the remainder before they will follow suit, unless, of course, any important advance in price takes place at an early date. Taking the hard rock mining industry as a whole, we believe we are correct in asserting that every ton of high grade which has been shipped to date from Florida has been produced at a loss, which fact was boldly asserted at the convention in Ocala last autumn, when prices were higher than a few months later.

That the fault lies in the methods of mining and marketing must be apparent to all who have studied the position, and the result is only what could be expected from mining enterprises conducted by lawyers and clergymen, store clerks and real estate agents. There are, of course, exceptions to the above, and the leading mines are managed by men of substantial mining ability, with a knowledge of the phosphate market, but in nearly all cases the difficulties to be contended with have been far more serious than was ever anticipated, and cost of production has been found to be a very different matter when regular mining operations were undertaken and the surface pockets were exhausted. Additional plant has been the order of the day, though at the present time the cost of production at the well-regulated mines is much lower than originally. Yet most of the companies are having their financial resources very seriously taxed in order to keep in line.

The river companies have fared much better all round than the hard rock companies, but the general management has been practical, and in most cases the operations have yielded satisfactory returns. Present prices, however, leave a very small margin for profit, and several undertakings have closed down until prices are firmer.

Of the land pebble industry it is too early to speak, as it is only during this year that practical operations have been commenced, but the original margin of profit has been reduced by the fall in prices to a very close figure.

Turning now to the European market, it seems natural, perhaps, to suppose that the fall in prices has been beneficial to manufacturers. This, unfortunately, is not the case, for at the time of the drop in prices there was a relapse in the superphosphate trade, caused by an inferior harvest. This, of course, meant lower prices for fertilizers and a slack demand. On the other hand, those manufacturers who had not bought at bottom prices had to compete with their more fortunate neighbors, and even those who had made their purchases when the market was at the lowest were competing at cut throat rates with one another for the small business which was available.

In former years prices to the Continent were higher than those to the United Kingdom in proportion to the difference in freight. Florida sellers, however, in their haste to secure contracts, equalized prices at all ports. Now the English manufacturers do a large Continental trade, their advantage in price for transatlantic cargoes enabling them to compete with Continental sellers. With prices the same for all ports much of this trade has been lost,

and the shipments of phosphate to the United Kingdom during last year showed a considerable falling off from previous years.

Competition in Europe is always very keen, and of late years has been rendered more acute by the Belgian manufacturers, who have recently succeeded in improving their make of high-grade superphosphates so as to compete successfully with the German manufacturers. In addition to this the Belgians are able to produce their sulphuric acid at about \$2.50 per ton cheaper than their neighbors by using zinc ore as a by-product instead of roasting pyrites.

We find, therefore, that the fact of Florida having dictated the prices of phosphate to the world (or in reality having been foolish enough to accept any prices which sellers might choose to offer) has resulted in no benefit to the Florida miners, has not enriched the manufacturers in Europe, but, on the other hand, has caused serious losses or cut down the profits of all the phosphate-mining industries of the world, notably those of South Carolina.

Having ascertained this fact, the question arises as to how the present position can be remedied.

The demand for phosphates is certainly increasing, although temporary checks are to be expected from time to time, and the fact that the total production of phosphates from all sources increased from 500,000 tons in 1880 to 1,303,000 tons in 1890* (which latter figure must be supplemented by the addition of 700,000 tons of basic slag, which new fertilizer came on the market in 1887), proves that the phosphate trade is as yet only in its early childhood. A sudden or considerable rise in price, however, is not to be expected, for with all the available sources of supply which are in view and with the certain fact of an increased production in Florida, it is not reasonable to suppose that buyers will be induced to pay higher prices, which can only be realized by an absence of weak sellers. It is nevertheless possible to keep the market steady and avoid fluctuations, which upset the balance of trade and do no good to any one, by endeavoring to arrive at some kind of an arrangement in Florida for the avoidance of senseless internal competition. Though we do not believe in the possibility of combining at the present moment all the raisers of high-grade in one syndicate, yet much may be done by adopting rational methods for the marketing of the product by confining sale agencies to as few hands as possible and by doing away with the system so much in vogue, whereby each company has some friend to represent them in Europe who is outside the trade and has no experience of the phosphate market.

As regards the pebble industry of Florida, no amount of competition with South Carolina will enlarge the consumption of the market, and as the price of South Carolina river rock is practically the barometer of the European fertilizer trade, it would be well for those interested in these two industries to arrive at some arrangement for pooling the business; for although prices leave a margin for profit, it is quite

* *I*de page 20 Millar's "Florida, South Carolina and Canadian Phosphates."

as easy—in fact a great deal easier—to sell on a firm market at good rates than to force sales on a weak and unstable market; and buyers would rather pay a higher price, if they felt secure against a drop in prices, than to buy at lower figures and be haunted by the possibility of a further fall.

To conclude, Florida has certainly, beyond any possibility of doubt, the most extensive and important deposits of phosphate ever discovered, and their exploitations can be made to return most satisfactory financial results under proper mining and business management. The present policy, however, of Florida phosphate miners, with their vaunted control of the phosphate market, which sounds like strength, but is really weakness in its most aggravated form, suggests to us the question of "Cui bono?" to which we confess our absolute inability to give a reply.

Iron Production in the United Kingdom.

LONDON, ENG., August 19.

Labor has presented so many obstacles in the way of the iron and coal industries that a decreased output from the furnaces of the United Kingdom during the first half of the present year is not at all startling. The figures which are before us merely emphasize the fact so indelibly written in the minds of iron manufacturers, economists and legislators in the late Durham conflict, that there is not that firm relationship existing between employers and employed as is necessary to the continuance of trade engagements. The objects and desires that inspire the minds of master and men are evidently still not in harmony one with the other. There is not that spirit of co-operation, of mutual consideration, that should exist for the maintenance of undisturbed trade. Capital and labor do not at present stand on the same platform with one another and regard things from the same point of view, and, as we say, these figures which show to us how we stand as regards the production of pig iron during the first six months of the present year remind us of these facts. The question of wages and of a limitation of the hours of labor are at present the most prominent in the economic and industrial worlds, and are now verging upon the sphere of politics; their adumbrations are clearly visible upon the realm of legislation, and sooner or later, in some form or another, politicians will have to seriously consider, with a view to taking action thereon, the labor questions, which not only in our own country, but also in America and elsewhere, have forced themselves by a natural law to the front of economic questions of the day.

But regarding the statistics showing the make of pig iron in 1892, recently published by the British Iron Trade Association, another conclusion is to be drawn, and that is that both as regards the requirements of the various trades in which iron is the essential at home and also abroad, the iron trade of Great Britain has not been in a flourishing condition during that period, nor is it at the present moment. It is not only that the manufacture of pig iron has been very greatly reduced in the three most important districts of England, but that there has been nothing afloat which has demanded a more extensive output. The same has apparently been the position in many other countries where our iron and steel commodities enter in the greatest quantities. In nearly every district in the United Kingdom, except Scotland, where there has been an increase of 73,400 tons, and Notts and Leicestershire, where the augmentation amounted to 19,628 tons, there have been considerable reductions—districts which have not been affected by the great coal strike and whose fuel or ore supplies have remained undisturbed. In spite therefore of the extenuating circumstances connected with Cleve-

land, Lancashire and Cumberland, the iron trade has shown a general inclination of retrogression. The figures for the various districts are as under:

PRODUCTION OF PIG IRON IN THE UNITED KINGDOM IN THE FIRST HALF OF 1892, COMPARED WITH THE CORRESPONDING PERIOD OF 1891.

District.	1892. Tons.	1891. Tons.	Increase or decrease in 1892. Tons.
Cleveland.....	600,819	1,320,063	719,244
Scotland.....	466,000	392,600	73,400
Cumberland.....	222,747	342,051	119,304
Lancashire.....	235,505	344,281	108,776
South Wales.....	332,087	358,007	25,920
Lincolnshire.....	179,847	121,914	57,933
Northamptonshire.....	88,098	97,824	9,726
Derbyshire.....	138,548	139,379	751
Notts & Leicestershire.....	137,624	117,956	19,668
North Staffordshire.....	98,573	114,039	15,466
South Staffordshire and Worcestershire.....	170,135	172,378	2,243
South and West York- shire.....	124,789	124,291	498
Shropshire.....	25,335	24,634	701
North Wales.....	22,312	26,977	4,665
Other districts.....	17,459	16,007	1,452
Totals.....	2,790,918	3,712,387	921,469
Net decrease.....			921,469

*Increase.

The position of the stocks of pig iron reflect by the extent of the reduction made in them the same features as do the figures representing the production, whilst the home consumption has stood as follows:

	Tons.
Pig iron consumed during first half of 1892.....	3,050,354
Pig iron consumed during first half of 1891.....	3,532,554
Pig iron consumed during second half of 1891.....	3,030,520

So that the home consumption has slightly increased over the immediately preceding six months.

Coastwise Canals.

In connection with the series of articles on the Intercoastal Waterway by Prof. L. M. Haupt, which recently appeared in these columns, the following interview with Rear-Admiral Daniel Ammen on this same subject, which appeared a few days ago in the Baltimore Sun, will be of interest:

"With such a system of internal waterways from Norfolk to Fernandina, and the Chesapeake & Delaware made a ship canal, it would be practically impossible for any foreign power to maintain an effective blockade of Atlantic coast ports from Philadelphia to Fernandina. Commercially the advantages of the canals south of Norfolk would be tremendous, and their cost of building and maintenance would be inconsiderable when compared with their advantages. The plan would be to go down through the present Chesapeake & Albemarle Canal from Norfolk to Albemarle and Pamlico sounds. From Albemarle sound down to a point near Cape Fear, near Wilmington, N. C., there are long sand spits extending the entire distance. Near Wilmington there would have to be some cutting done, say probably for ten miles, after which the sand spits begin again and continue with but few interruptions to Fernandina and even farther.

"With only about 100 miles or less to be cut or deepened, a broad internal waterway about 700 miles long and nine to ten feet deep would be secured. It would not mean that traffic would only be between Fernandina and Norfolk. The effect of such a waterway would be to more fully develop the whole stretch of country along its line, and there would be an immense broadside of territory from which traffic would be drawn. In time of war torpedo boats could use the way to great advantage; goods could be shipped through it to blockaded ports, and the shallow water extending out from the sand spits would effectually protect it from the guns of war vessels outside."

DURING the past year, from September 1, 1891, to August 31, 1892, the exports of corn from New Orleans were 6,962,006 bushels, of wheat 13,805,682 bushels and 661,492 bushels of rye, a total of 21,429,180 bushels, against a total of 7,259,301 bushels for the corresponding period last year.

Gold Mining in South Africa and the Cyanide Process.

By C. Ad. Mezger, M. E.

The following notes on South Africa may have at present no immediate interest for the North American South, but they may deserve some attention, showing what can be accomplished by mining skill which does not have to fight against unfounded prejudices and thoroughly misunderstood failures. The figures, as far as I could get them, show further that the average yield of the ores is very moderate, and that the secrecy of the success is based solely upon the energy of the managers, who have put up as many stamps as possible for working an immense quantity of ore.

I have to credit for my material the *Engineering and Mining Journal*, South Africa, London, of May 8, and the publications of the company which controls the McArthur-Forrest process in the United States.

The tons are "long," 2,240 pounds, and a shilling is reckoned at 24 cents.

Let us take first a look at the Witwatersrand mining share list of the London Stock Exchange. We find sixty-nine companies, with a stock capital of £14,613,500, or \$70,875,500, the largest of which (Robinson) has £2,750,000, and the smallest £30,000. The average capital is about £1,000,000.

The mining rights cover 2,331 claims of 60,000 square feet, or 1,3774 acres each, and 71,239 acres, or a total of 74,449 acres, or 116.3 square miles. We find as the average property of a company 1,088 acres; maximum, 30,000 acres; minimum, 845 acres. It is impossible to figure out any correlations between capital and acres; these are purely accidental.

If we look at the dividends we find that the highest ones are paid by companies with moderate stock capitals, for instance:

	Capital.	Dividend.
Crown Reef ('89-'92).....	\$582,000	101%
Rodeport ('89-'91).....	485,000	70%
Ferreira ('91-'92).....	218,000	125%
Jubilee ('89-'92).....	145,500	130%
Meyer ('89-'91).....	312,800	57%
Worcester ('89-'92).....	485,000	82.5%

The last one shows a decided decrease, the dividend being for the four years, 35 per cent., 30 per cent., 10 per cent., 7½ per cent. The last one may be a partial dividend. The largest company, with \$13,375,000 capital, paid ('89-'91) 14 per cent., or \$1,872,500. The whole list shows twenty-six dividend-paying companies in the total of sixty-nine, and twenty-three without production. One of them shows 15 per cent. dividend, which allows of the conclusion that the record of production may not be complete. But the table of production is good. It was:

	Ounces.
November, 1891.....	66,687
December, 1891.....	68,409
January, 1892.....	72,687
February, 1892.....	81,836
March, 1892.....	91,577
Total for five months.....	381,196
Value.....	\$7,625,920

The largest company, Robinson, produced 11,015, 12,040, 14,098, 22,441, 23,135 ounces in the five months, and the totals above show a decided increase. A more detailed report of Robinson for April says: "Mined and milled, 8,852 tons (9,737 short tons); yield, 8,904 ounces; from tailings, 6,320 ounces—a total of 15,224 ounces." The sum paid for concentrates from other works amounted to £23,478 for January, February and March, and it seems that the figures above include a considerable amount of gold produced from them. The 15,224 ounces for April were produced from their own ores. Sixty stamps were employed, and the average yield per ton appears to be 1.5635 ounces, or \$31.25; really an enormous amount of gold. The amount of ore crushed per stamp per day was 5.08 long (5.6 short) tons, which is also

extraordinary, 2.2 tons being a fair average for common 750-pound stamps. It is more probable that the quartz is very mild than that a peculiar construction of the stamps causes this enormous stamping power.

It is evident that in the case of this company the watering of the stock did not hurt the enterprise.

A compilation of Mr. A. R. Goldring, secretary of the Witwatersrand Chamber of Mines, finds that the total output for April was 95,562 ounces from 153,197 long (168,517 short) tons, or 12.4 pennyweights per long ton (11.16 pennyweights per short ton), or say \$11.00, of which about 25 per cent. was from tailings. I cannot find any figure of the real contents of the ore, and can therefore not give the effectiveness of the whole milling process. The figures for direct free gold production of 75 per cent. against 25 per cent. from tailings indicates, perhaps, that this 25 per cent. was extracted from pyrites or from concentrates—there is only given the two words, chlorination and cyanide process. Of the 95,562 ounces mentioned above, 10,389 ounces were by cyanide process from tailings and 4,000 ounces by chlorination from concentrates. We see that for April the proportion of gold from concentrates and tailings is 14,389 ounces, or 15.04 per cent. These figures, being dependent on very important changes in the general situation—for instance, the erection of new mills, of chlorination and cyanide works—are, of course, much changing. Whether there was any concentration of the tailings does not appear. If more took place it seems that the milling lets much gold escape.

The number of stamps running in the district was in April 1,880 and daily increasing. The output of the Rand district for 1890 was \$10,885,616, and the entire world's product was \$116,008,900; therefore the Rand district yielded about 9.3 per cent. of the total. For 1891 the figures were: Rand, \$12,761,392; world, \$125,300,000; Rand, 10.2 per cent. To-day it is impossible to say to what amount this enormous output will be raised, especially when we consider the fact that the whole mining industry over there is only a very few years old.

I have a scanty report of the Ferreira mine, belonging to the same district, where 15,310 tons (16,840 short tons) of tailings were treated by cyanogen in six months at a cost of, say, \$2.70 per short ton.

It seems that the extraction of gold amounted to 74½ per cent., which is not satisfactory.

The *Money Market Review*, London, gives this note: "The extraction of gold by the cyanide process in the Rand district was: In October, 1891, 3,300 ounces; in November, 5,732 ounces; in December, 8,300 ounces; January, 1892, 9,700 ounces; February, 10,366 ounces; March, 11,500 ounces; April, 13,500 ounces, or in seven months 62,400 ounces."

We see that this process has made a very considerable progress in South Africa. It consists in dissolving gold and silver in a weak solution of cyanide of potash and precipitating these metals with metallic zinc finely divided. It has been successfully used for the treatment of very refractory ores, but it has been settled already that not all ores can be subject to it. The reasons are either incompletely known or they are not published. One of the most elaborate works has been published by Louis Tanin, M. E., in *Engineering and Mining Journal*, December 29, 1888, consisting in a series of tests in the laboratory, which leave still many questions open.

The experiments in the far West have had very various results. Many mines have adopted it in the American West; many have tried it and did not adopt it. The reasons are not always clear, and it may be that some mines will take it up again, as there are many reasons to suppose that the first experiments were made

roughly and just after the prescription without investigating the special case—a work which wants some chemical knowledge which may not always have been available.

The practical gold miner calls, generally, all ores refractory which do not amalgamate, starting with "rusty gold," then all the different pyrites and their mixtures. These ores are either treated by smelting, especially if lead is present, or chlorinated after a careful roasting. Since Plattner invented the process (about 1850) it has undergone many changes in the apparatus used, but only one change in the system. Plattner used free chlorine gas, prepared in gas generators with salt, sulphuric acid and peroxide of manganese, and conducted it into the ore. Others developed the gas from bleaching powder with sulphuric acid in the ore, mixing the substances together. The latter modification works considerably quicker. I will not dwell upon the different methods of precipitation, of which the latest, introduced at Deadwood, South Dakota, deserves special attention.

It is possible to work with this process up to 95 per cent. of the fire-assay; generally 90 to 92 per cent. will appear satisfactory. The costs are very moderate. The roasting destroys the sulphur, which, however, can be utilized for sulphuric acid.

The cyanide process needs no roasting, and takes the gold up from sulphurets under most astonishing circumstances. The costs are also moderate. It deserves great attention in the South, where so many sulphurets are existing which had till now regularly the effect of throwing a mine up as soon as they were struck, because nobody could treat them, without regard to the fact that they were and are treated successfully by chlorination.

The value of high grade pyrites, as concentrates are, in sulphur is about 50 per cent. of the market value of brimstone. The necessity of roasting makes the plant for chlorination somewhat costly, and a sulphuric acid plant is always such a considerable expense as to leave the question open whether the erection of a plant can be recommended or not. The question will mostly depend upon the possibility of feeding the acid plant regularly with ore, and then upon the possibility of getting railroad connections.

With the cyanide process this is different. The gold can be extracted, and the pyrites, practically free of gold, shipped and sold to acid plants. The capital necessary is very moderate. It will first be necessary to investigate whether the Southern ores are fit for this treatment. There can be no doubt that very many of these ores will be found which will offer no trouble, and as little doubt that many will be found for which chlorination is the more favorable process.

The numerous improvements in the harbor of Velasco, Texas, have given it great prominence as a deep water port of the future. Negotiations which have been pending in New York for some time past, it is stated, will close this week for the establishment of a line of steamers between Velasco and that port. The four steamships will be the fleetest on the Atlantic coast. Mr. Rockefeller, of the Standard Oil Co., and leading men of the Missouri, Kansas & Texas Railroad, are, it is alleged, at the head of the enterprise, which, it is said, accounts for the recent change in the road's charter authorizing it to build to Velasco.

PRELIMINARY steps towards the organization of the Association of Mining Engineers of the Southwest were taken in El Paso, Texas, last week. Committees were chosen to arrange the details, and permanent organization will be effected in December. The treasurer is F. W. Edlsten, of El Paso.

Life at the White Sulphur.

WHITE SULPHUR SPRINGS, W. VA., Aug. 31.

The other day, on the verandah of the enormous Grand Central Hotel at the White Sulphur Springs, a party of gentlemen, who all stand high where they came from, were talking about things industrial, political and social in the South. Among them was Judge Snyder, formerly of the Supreme Bench of West Virginia—one of the few men who ever resigned a high judicial position—and Prof. J. J. White, who ought to have been the permanent instead of temporary successor of Gen. R. E. Lee as president of Washington & Lee University, and Capt. A. F. Mathews, of Lewisburg, W. Va., who is prominently identified with the great Pott's creek iron syndicate, at the head of which is Senator Camden, and Dr. Thom, from the Eastern Shore of Virginia, and, I believe, the Hon. William Groesbeck, of Ohio. The strikes were discussed, and Judge Snyder considered it a logical consequence of the affair at Homestead that large industrial plants should in future be located in what Mr. Atkinson has named "the land of the sky," where there is plenty of good, pure, wholesome air, uncontaminated by the poison of discontent that prevades the large Northern cities. The force bill was discussed, and it was suggested if Mr. Harrison should happen to have the gumption to give it out that that measure would be abandoned by his party if one or two Southern States should go republican this fall, that the effect might be to disintegrate the solid South, and that if the solid South should go to pieces the democrats would gain more in the Northwest than they would lose in the South. The World's Fair was discussed, and the necessity that rests upon the South to make the most of the opportunity to advertise its vast undeveloped wealth. Apropos of advertising the South, the effect of the work being done by the Chesapeake & Ohio Railway under the Ingalls regime from the New River coal mines to the piers at Newport News, and the effect of making the Chesapeake & Ohio, by the present fast, fine trains, a great trunk line for travel from the East to the West, from the North to the Southwest, whereby thousands of people now see the two Virginias who but for the enterprising and well-directed efforts of Mr. Ingalls would have gone by one of the Northern trunk lines, was pointed to as a matter for general congratulation.

"But," said Captain Mathews, "had it not been for the summer resorts of the two Virginias, notably the White Sulphur, the Chesapeake & Ohio road would probably never have been built, and so to this one big healing spring here in the Alleghenies is, by rights, due the primary credit for much of the extraordinary development which has of late been witnessed between Huntington and Newport News."

Considered in this light, a brief sketch of this greatest of American mountain resorts can but be interesting to the readers of a journal which is recognized at home and abroad as the only reliable and comprehensive mirror of Southern conditions.

The White Sulphur Springs are situated on the line of the Chesapeake & Ohio Railway just west of the great backbone watershed which separates the streamlets that flow into the Atlantic from those that flow into the Gulf. It is 2,000 feet above the sea, and its environment is considered ideal by lovers of natural grandeur. It has been stated again and again by those classed by Rudyard Kipling as "globe trotters" that the autumn air and the autumn foliage here are unequalled. Tradition says that this was as great a resort among the Indians as it is among their successors, which is corroborated by many ancient graves and relics. Although the legend of

the spring has for generations formed part of the folk-lore of the Virginia mountains, it was never reduced to writing and put in print till a few days ago. It seems that Kiwassa, a local Indian deity, caught one of his warriors, who belonged up in the happy hunting grounds, dallying with a maiden, and was so incensed that he drew his bow and sent an arrow clanging through that recreant warrior's heart. Then was aimed another at the maiden's heart, but it struck the ground at her feet. In despair at the death of her adorer she stooped and drew it from the ground to plunge with her own hand into her bosom, when forth out of the vent made by the arrow in the ground a sulphurous stream gushed forth. Kiwassa took this to be an omen not to shoot again, and the maiden took it as an omen not to kill herself, but Kiwassa condemned her to hover round the spring till it should flow no more.

The spring was discovered by General Andrew Lewis in 1751, who afterwards, at the battle of Point Pleasant, broke the red man's power in this region, and forced him to confine his scalping operations to the country west of the Ohio and Big Sandy rivers. Soon after its discovery by General Lewis, who gave a name to the beautiful river near by, after which this, Greenbrier county, was called, the sulphur spring began to be frequented by invalids who came here regularly from all over Eastern Virginia and the Valley and dwelt in tents until about 1784, when the habitues of the place began building log cabins. The log-cabin era continued for a quarter of a century. Scores of them were erected round the spring, but not a vestige of one of these remains, the ground on which they stood being covered by a luxurious bluegrass lawn. In 1818 the property began to be systematically improved by James Calwell. In 1857 the Grand Hotel, of brick, and a number of really imposing brick dwellings were erected. A few years ago two large wings were added to the Grand Hotel, making it equal in appointments, if not indeed in extent, to any at Saratoga. There are besides the hundreds of rooms in the hotel exactly 100 cottages, some of which contain a dozen apartments. The smaller cottages are leased for the summer by gentlemen who bring their families, their servants, their carriages and horses, and live, with the exception of eating in the hotel dining room, just as they live at home.

The dining-room seats 1,200 persons, and to "a looker-on in Venice" the sight of 1,200 well-dressed people and the sound of 1,200 cheerful voices, even though accompanied by the rattle of 12,000 plates and dishes, are for the nonce as exhilarating as the mountain air, especially at night when the electric lights are on. The parlor is half as large again as the celebrated East room of the White House at Washington; so, too, is the ball-room, whose floor is polished oak.

The lands attached to this resort cover 12,000 acres, permeated with royal driveways, and the livery here is in keeping with the other requirements of so magnificent a place. My little eight-year-old daughter, in classifying the attractions, puts it this way: "First, the swimming pool; second, 'Creamy'; third, the dancing." "Creamy" is a very gentle, well-gaited pony which the little girls ride from dawn till dark, and what is remarkable, "Creamy" not only still survives, but endures the ordeal good-naturedly.

At the beginning of the season, in view of the low price of cotton in the South and the stringency in old Virginia caused by over-speculation in boom town lots, and the fact that this is a presidential year, the outlook for a prosperous season was not altogether flattering, but Major Eakle, the best resort manager in America, went ahead resolved to make the attractions of the place greater than before, and to set

before his guests better fare than can be had for \$21 a week in the United States, and the result has been that while the crowds at all the other resorts in the Virginia mountains have been on an average less than half as large as last year, the company at the White Sulphur is about up to the average. And those who have been here this year are so unanimous in their commendation of the accommodations and the cuisine, that next year there will be reaped a great harvest from the seeds now being sown.

It is interesting to know what manner of outlay is necessary to run a place like this, and what an army of employes has to be paid off whether the crowd comes or not. To begin with, there are twenty five white male cooks and 200 dining-room servants. The other employes run the names on the pay-roll up to 500. A great shipment of choice cuts of meat comes from Philadelphia and New York every day, to supplement which there are regularly slaughtered here scores of bluegrass-fed steers and native lambs. The vegetables and fruits come early in the season from Norfolk; now from Baltimore and Washington.

There is but one thing lacking to cause the White Sulphur to be patronized by rich Northern people in summer and early autumn as the Florida resorts are patronized in winter, and that is, in my opinion, the fitting up of suites of rooms with baths, etc., like the best city hotels, and the establishment of a restaurant equal to any in New York. A gentleman from New York, who has spent twenty summers at Saratoga, came here this season for the first time and declared that the *table d'hôte* fare was unexcelled by anything he found at Saratoga; "but," he said, "Northern people have an idea that the Virginia resorts are kept in an old-time way, and are without what in this day and time are considered not as luxuries but necessities, and so only a few, comparatively, come, whereas thousands will come just so soon as the Virginia resorts are modernized." There is no doubt about it, Northern people are harder to satisfy and more exacting in the matter of conveniences than Southern people, and as this is such a royal place, nothing ought to be left undone to make it a place where city millionaires can come and live just as they live in the finest city hotels, and, as I have said, a little modern plumbing and a few extra fine sets of furniture and a high-class cafe alone are needed.

The season here runs through the month of October, and for men who want real rest, who want true re-invigoration, who want perfect air and exquisite scenery, there is no better time to come to White Sulphur than during the next six weeks.

THOMAS P. GRADY.

The Turpentine Industry.

The condition of the turpentine industry is depressing on all operators. Prices rule low and sales are not steady. In Savannah some speculative offerings for September-December futures were 29½ cents, and for January-April 31 cents; May-August 30 cents. A Savannah factor, speaking of the outlook in Georgia, says:

"Next year the output will not be so large as this year. The operators are working together in harmony and are fully alive to their true interests. There are reasons, outside of any action they may voluntarily take, that must result in a reduced crop. The most important is the fact that they, and the factors as well, will be short of money. Without cash they will be unable to cut as many boxes as usual and will be forced to abandon many old boxes. I suppose an operator here and there may be compelled to go out of business this season, but they will be few in number. By careful economy the great majority will pull through and make money next year."

Atlanta Enviroined by Thriving Suburbs.

By Col. J. W. Avery.

No city in the Union is encircled by more, better and more promising suburbs than Atlanta, linked to her by the best electric car lines, sources of growing support, and furnishing cheap and convenient homes of health and comfort for laborers and business men.

Among these suburban places, with thousands of citizens and fine homes, are: West End, beautiful Inman Park of 140 acres, Manchester, the home of the muses; East Lake, of over 300 acres, with its 40-acre lake; Peters Park, of 200 acres, where the Technological Institute is located; the Suburban Land Co., between Atlanta and Decatur; Ingleside, near Decatur; Ormewood Park, Windsor Park, Westwood Park, Woodville Park, Bonni-brae, Chattahoochee Land Co., to the new water works; Veteran Park, Piedmont Heights, McPherson Park, with the barracks; Edgewood, and its elegant homes and fine citizenship; Kirkwood, equally favored, and a host of other suburbs and germs of suburbs, developed and developing, and making an exquisite fringe of attractive suburban environment for the fortunate city.

None of these picturesque places have greater attractiveness and finer promise than that of the East Lake Land Co., four and one-half miles from Atlanta, on the right of the Georgia Railroad looking out from the city.

This captivating suburb of over 300 acres was once the beautiful and hospitable woodland home place of that romantic character, Col. Robert A. Alston, who fulfilled the dramatic destiny of his fateful blood by dying "with his boots on." The farm had its nobby cottage, toothsome fruit orchards and fruitful fish ponds, with all the other luxurious features of a Southern gentleman's rural residence. The fields were well tilled and the place generously kept in the lavish liberality of the princely owner.

This comely farm is the East Lake suburb which is rapidly blooming into fame and beauty. It takes its name from the conversion of a circular and symmetrical depression environed by wooded eminences into a superb lake of fresh, limpid, crystal water, furnished by delightful springs, rippling merrily to every breeze, sparkling in the sunshine and renewing itself in its unceasing flow off. The lake is a triumph of engineering skill and a marvel of landscape audacity. A broad, high bank encircles the water, around which the pedestrian can walk, and outside a wide, level drive affords a charming roadway for carriages.

There is a commodious house for bathers with all the conveniences for using the lake as a bathing place, and in the afternoons the water is filled with the delighted of both sexes, who seek its delicious comfort and recreation. There are rowboats and a little steam yacht in which visitors can ride, and refreshments can be obtained.

Over four hundred lots have been sold to people who will many of them build upon the pretty heights around summer cottages. A commanding eminence in a convenient and beautiful spot has been selected for the fine, modern hotel that is to be erected for guests and splendidly kept. There is a valuable mineral spring on the grounds for invalids.

The lake and grounds are to be thoroughly illuminated with electric lights, and an electric railroad is to be immediately constructed from Atlanta to the lake. It is already connected by a dummy and car line. The electric cars will give the swiftest and smoothest transportation.

East Lake is destined to become one of the ideal suburbs of the whole South.

Recent Publications.

STREET RAILWAYS: THEIR CONSTRUCTION, OPERATION AND MAINTENANCE. By C. E. Fairchild, editor *Street Railway Journal*. \$4.00 Street Railway Publishing Co., New York.

All that was necessary to the exhaustive treatment of street railways could have been said ten years ago in very small space. That it requires at this time a huge volume of 500 11x9 pages to give anything like a comprehensive view of present methods of city and suburban transit is one of the striking evidences of the amazing growth and transformation that this industry has undergone in a very few years. Probably there is no other industry in this country in which changes are so frequent and progress is so rapid, particularly in the matter of the application of electricity for purposes of traction. To attempt, as Mr. Fairchild has done, the thorough treatment of all the numerous features of the street railway industry is almost to run a race against time, for the changes come faster than they can be recorded. But Mr. Fairchild has accomplished a great work and has produced what must be considered the first full and complete treatise upon street railways. For years he has been a close and careful student of every phase of the many systems of transit, and he has recorded the results of his study and investigation in a very painstaking manner. His treatment of the subject is broader than the scope of any other work upon this topic, including not only electric, cable and animal traction and steam, air and gas motors, but also inclined planes, rack-rail inclines and elevated railroads. These various methods of traction are treated in great detail, and track construction and car building form two very valuable chapters in the book. Three chapters treat of discipline and rules, the organization and financing of companies and the keeping of street railway accounts, all of them subjects of great importance, but not generally given the attention they deserve. The book is profusely illustrated with a great number of original plans, sketches and drawings, so that every description can be easily and thoroughly comprehended. Few people have any idea of the prodigious amount of work involved in the preparation of such a volume, but those who do will appreciate the accuracy and completeness of what Mr. Fairchild has done. To any man who has any connection with a street railway this book must be invaluable.

POOR'S MANUAL OF THE RAILROADS OF THE UNITED STATES FOR 1892. By Henry V. Poor. 1,500 pages, royal octavo. \$6.00. For sale in Baltimore by W. E. C. Harrison & Sons, 224 East Baltimore street.

Poor's Manual is so universally known and appreciated that it might suffice simply to announce that the volume for this year has been issued. The fact that the present is the twenty-fifth annual volume, however, suggests some further comment upon this valuable work. As we look back to the year when the Manual first appeared, we find that the railroad mileage of the country has increased nearly five-fold since then, or from 39,250 to 170,601, while the freight traffic during the same period has grown from 48,872,500 tons to 704,398,600 tons. Here are some other figures of railroad growth during the period covered by Poor's Manual: In New England the mileage has increased from 3,938 miles to 6,860; in the six Middle States from 9,190 miles to 20,428 miles, and in the South from 9,940 miles to 32,110 miles. In the great West twenty-five years ago there were only 15,777 miles of railroad where now there are 100,599 miles, and on the Pacific coast the growth has been even more striking—from 431 miles to 12,613. But this is not the time or place to deal with such figures. What we wish to say is that each of these twenty-five years has added to the fullness and authority of Poor's Manual

and made it more and more valuable to those who deal in railroad and financial statistics.

THE ELECTRIC RAILWAY IN THEORY AND PRACTICE. By O. T. Crosby and Dr. Louis Bell. Octavo, 400 pages. \$2.50. The W. J. Johnston Co., Limited, New York.

The scope of Messrs. Crosby and Bell's work in the production of this book is best conveyed in their own words: "We have endeavored to present both the elementary theory of the subject and the general features of the best practice, describing in detail particular methods and forms of car machinery only in so far as they are of importance in illustrating the broad principles on which they depend." In following such a plan the authors have chosen wisely, and have produced a handbook that is in a measure independent of the rapid changes in the methods and application of electricity in street railway work. The best railway motors of to-day may be obsolete in twelve months, but the elementary theory remains unchanged, and to this fact is due the permanent value of Messrs. Crosby and Bell's book. While it deals so largely with principles, it is still essentially practical in its treatment of the subjects, and is not beyond the comprehension of one unskilled or unlearned in electrical science. With the exception of a brief chapter upon the track and car-houses, the book is devoted to the question of motive power, its generation, transmission and application. Commercial considerations, which embrace the details of cost of construction, operation and maintenance, with comparative figures for various methods, form the subject of an interesting and very practical chapter, and some valuable historical notes are gathered in the concluding chapter. The general style of the book is pleasing, and excellent typography and illustrations add materially to the attractiveness of the book. The volume is one that properly belongs in a working library.

ABRAHAM LINCOLN AND MEN OF WAR TIMES. By A. K. McClure. 462 pages. Cloth, \$2.00. The Times, Philadelphia, Pa.

Colonel McClure's war reminiscences have reached a third edition, a fact that is not surprising to anyone who has read the book. It is not a connected and consecutive history of Lincoln, but rather a grouping of reminiscent chapters, each of which deals with the great war President in some distinct phase of his character as brought out in his relation with the leading characters of the time. It is a volume that a reader can start upon at any chapter as well as at the beginning, but anyone who reads one chapter is likely to continue to the end without pausing. Colonel McClure is a forceful writer, and to his always vigorous style is added the vividness of actual observation of and contact with the stirring events of the war time. No other man now living could treat these subjects with the combined authority, force and grace that have been displayed by Colonel McClure.

PHILADELPHIA SECURITIES: A Descriptive and Statistical Manual of the Corporations of the City of Philadelphia. Compiled by J. P. Critten and Charles B. Helffrich. 750 pages. Price \$4.00. Burk & McFetridge, Philadelphia.

The third annual issue of this very comprehensive financial handbook contains a number of new features, among which may be noted the terms of the new coal leases and agreements of the Philadelphia & Reading Railroad and allied companies, accurate recent statistics of coal production in Pennsylvania, and quotations for several years past of prices of stocks and bonds sold upon the Stock Exchange and at auction. Among the other features in the book may be mentioned the special tables of dividends of banks, trust and insurance companies for six years, and of passenger railways for twenty-six years; also of passengers carried for twenty-six

years; summaries of the banking capital of Philadelphia for successive periods; an official accurate list of numbers, etc., of securities listed on the Philadelphia Stock Exchange; complete lists of the assets of all financial institutions and tables of assessed valuations of buildings owned by them; the precise description of the kind of securities upon which the bonds and mortgages of railroad, passenger railway and miscellaneous companies are based. References to upwards of 5,000 distinct corporations are contained in this book, and the compilers state that "in the collection of the information every one of these companies has been applied to, and where described in the preceding book the article upon each one has been submitted for revision and addition."

MINERAL RESOURCES OF THE UNITED STATES. Calendar years 1889 and 1890. By David T. Day. United States Geological Survey. Price 50 cents. Remittances should be addressed to the Director United States Geological Survey, Washington, D. C.

For the convenience of the Geological Survey the Census Office gathered all its mineral statistics for the calendar year 1889 instead of the lawful census year which ended May 31, 1890. By reason of this action the publication of the "Mineral Resources" for 1889 has been delayed two and one-half years and then merged with the volume for 1890, which itself does not appear until a year and a half after the close of the period which it covers. This tardiness largely lessens the value of the statistics, and there is offered the lame excuse that most of the information has been given out through the daily and technical press as the work advanced.

The value of the volumes on "Mineral Resources" is as books for reference, and the portions published through the press are of only momentary service unless one keeps a deskfull of clippings or searches through files for the fragments. There is no legitimate reason why these complete volumes should not be published within six months of the close of each year, and their value thereby greatly enhanced. The greater part of the information is available in a much briefer period. Even with the abundant time for the preparation of the latest volume, some of the statistics are not brought up to a later period than the calendar year 1889. The chapter on "stone," by William C. Day, gives no figures later than 1889, although the total value of building stone produced in that year is estimated at \$54,000,000 in the summary of the volume. The figures of natural gas, by Jos. D. Weeks, are for 1889, with a single exception. Despite its delay and shortcomings, the book is of much value, as it contains a large amount of compiled matter that cannot be found elsewhere in so convenient a form. We are of the opinion, however, that a little more energy in the direction of the work would so hasten the compilation of the various chapters that a much earlier publication of the complete volume would be possible.

It is reported that Mr. Geo. W. Palmer, of Saltville, Va., has succeeded in forming a new company to purchase the plant and property of the company he owns at that place. The new company will be called the Mathieson Alkali Works. Edward E. Arnold, of Providence, R. I., is president; Geo. W. Palmer, first vice-president; R. T. Wilson, Jr., New York, second vice-president; Charles Boshier, New York, treasurer, and W. P. Robinson, of Brooklyn, secretary. The price named is \$1,000,000. The new company is capitalized at \$2,500,000, and will soon commence erecting a plant costing from \$800,000 to \$1,000,000. They will continue the manufacture of salt, soda ash, bleaching powder, sulphuric acid and chemicals. About 1,100 men will be employed at the works.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 99.]

The News of Wall Street.

OFFICE OF MANUFACTURERS' RECORD,
No. 126 Liberty Street,
NEW YORK, August 30.

It has been a week of bear "points," of narrow and restricted trading, of "professional" work on 'Change, of manipulation of "specialties" like the industrial shares until they became the only features. Take away the trading in Sugar Refining, in Cordage and in Consolidated Gas, and there would have been few shares that might have been called, even by courteous comparison, active, Reading and one or two others monopolizing the other business. Yet there has been no great decline in prices for all that. Attempts to bring about a decline have not been backed by any great and powerful bear party, while on the other hand, those interested in various stocks mildly attacked have seen to it that their interests have not suffered. It would take a good deal to bring about a bull panic these days, for the bull side of the house has every advantage, having simply to act on the defensive. In other words, it takes active, aggressive, nervy plunging to break a market so firmly held in hand as this seems to be, while on the other hand, the bulls have nothing to do but do nothing to hold their own, waiting until a more favorable state of affairs shall come before beginning any active campaign against the short interest. For your bull is banking on the future now, and if I mistake not is feeling pretty confident that he has discounted it pretty well. He feels that it would take an unexpected calamity to shake him from his present commanding position.

On the other hand, and for the present, the short operators seem to have their judgment justified by the present situation as it develops from day to day. A cholera year, with all it implies in the way of disturbance of trade and diminution of traffic is threatened—nay, even is here. For whether cholera be here or in Hamburg or London, its ultimate effect is produced. There was a flippant broker the other day who put it thus heartlessly: "Every European who dies of cholera means so many bushels less of wheat sent from Minnesota across the Atlantic; he is one less mouth for America to feed." So the disturbance in traffic does not end with the interruption of steamship carriage through almost prohibitory quarantine regulations, and even port blockades and embargoes, but it strikes at the very marrow of the transatlantic trade, which sheds profits abroad from the day of harvest through the days of moving the crop to the seaboard and through all its stages of handling from the field to the consumer. Thus in this one great item of business there is money to be lost through not being earned (as the boy said sagely about the pins, which saved millions of people from death by their not swallowing them) by railroads, terminal companies and by the workmen employed in these processes; less money to be earned by the banker for the same reasons; perhaps fewer visitors to our World's Fair in case quarantine should be superseded by exclusion; and thus the chain might be added to by an indefinite number of links. All this, too, without a single case of cholera having reached our shores. What the results might be if it were to develop into an epidemic here and make another such *annee terrible* as that one in the '40s we may as well not begin to think of for the present.

Hence, and to sum up, the cholera and the fear of it make a bearish point not on wheat only, but upon all commodities where free traffic with Europe is desirable and even necessary for the general prosperity.

It has been a week of declining prices in various staples—in almost all, in fact. Coal is higher—that is to say, domestic sizes of anthracite have been advanced, and so is money by a shade. These two are not in themselves bullish factors. Coal goes up through the arbitrary action of the coal combination. The fact that anthracite for manufacturing purposes is not much higher leaves no benefit to be derived by bituminous coal interests through the substitution of their wares for Mr. McLeod's. Money is getting stiffer, and should become more so, for the West is beginning to draw very heavily upon our bank reserves, in preparation for the movement of the crops. Tight money tends to work lower prices in Wall street, as every one knows, through making speculative operations more costly, and beyond this disturbing from time to time the financial arrangements, such as collateral loans and floating indebtednesses, which railway and other corporations, from the greatest to the least, keep afloat along the street. This, with the continual drain of gold abroad—these Austrians don't seem to have got enough of our "yellow boys" and yellow bars yet—tend to cause a great deal more uneasiness in banking rather than in speculative circles than appears on the surface, and far more than those most apprehensive, because they see most clearly, will admit.

There is also a matter which I have not yet heard mentioned in the street, though no doubt Mr. J. Pierpont Morgan and others of his class have devoted more or less attention to it and are keeping a close watch upon it. I refer to the probability of rate wars in the railway business, not, as is usual, in freight, but in passenger traffic. Already there have been several instances of demoralization of rates during the past summer. Perhaps 15,000 passengers came from all parts of this country to the Christian Endeavor Convention. Thousands of Knights Templar became pilgrims to Denver. Other national conventions assembled in other parts of the country. Every one of these Meccas became a nidus of the rate-cutting typhus, for to get this large amount of trade, or rather to stimulate it, the general passenger agents of one road after another, following a time-honored and perhaps necessary custom, grant special excursion tickets good for say five days on the outward journey, and for the return trip being unrestricted as to time. Now, in the good old days before the interstate commerce law was passed to please the grangers the general passenger agents could restrict these tickets to the use of those actually participating in these conventions. Nowadays these tickets must be sold at an open rate, so that the Sons of Belial could come to New York on the Christian Endeavor ticket and paint the metropolis pink while those for whom the rate was made were enjoying their spiritual feast. "What harm?" it may be asked. Simply that here is a great loss in potential earnings for which any passenger expert will tell you the increased traffic does not compensate, the *Mail and Express* workmen's train summer silliness calculations to the contrary notwithstanding. Formerly the railroad agent could sell his tickets at a reduction for quantity and still keep up his price to the retail purchaser. Now, if he sells a thousand tickets *en bloc* for half price, he's got to sell to every customer at the same reduction.

If it were not for the struggle of the weaker lines to get business these things need not be so, for the big lines could tell the convention crowds that they must pay full rates or stay at home. They would pay up and look pleasant. But what the weak lines do they are strong enough to make their greater brethren follow.

These are as destructive rate wars as some of the freight wars, and the tendency is not to suppress them, but to multiply

them. Summer sea-shore "excursions" from as far west as Chicago and as far south as Nashville are arranged. The American people are doing everything they can to help this fever to spread, for they are a gregarious people, much given to getting up lodge trips, conventions, conclaves, national organizations of everything from junkmen to tea tasters. It is becoming as serious a problem for railroad men as the maintenance of freight rates upon a profitable and equitable basis.

While digressing into this subject, I have left behind, I fear, an impression that the country is going to the dogs. That is far from my belief. The conditions I have been referring to are in the main the ephemeral circumstances which the shortsighted take for conditions and go speculate upon. To declare that because money is tighter and wheat lower all the structure of future prosperity built up in former rosy-tinted letters of mine is to topple to the ground would not only stultify myself, but also be untrue. The facts remain as they were, with something added. A very grave danger to railway interests has at last been removed, forever I hope, by the Texas decision, which it will pay every man who owns a share of stock to read.

The consummation of a new combination, this time of certain competing milling interests into another so-called trust, constrains me to risk your patience by again referring to this very evident and salutary tendency of the present time to form consolidations. Perhaps, also, the activity and advance in prices of such shares as Sugar, Cordage, Distillers' and Gas also convinces me that the necessity and profitability of such combinations is being recognized by the speculative public. It seems as plain as that one and two make three, that the operation of a number of like plants turning out the same product, harmoniously instead of competitively, under one management instead of several, limiting production and keeping up price, instead of *vice versa*, must add to the profits of the combined ownership. This movement is but begun, yet see to what an extent it has already spread. Great railways combine, and joint net earnings go up while operating expenses decrease, although the public finds itself getting more prompt and efficient service. A "syndicate" acquires several little metropolitan street railroads, and lo, a metropolitan passenger "system," with all the added comforts and conveniences that the word implies. A trust takes hold of sugar and the commodity becomes staple in price, quality and supply, while the refiner's earn just what a healthy state of trade warrants for its joint owners. The trust idea is as old as the trade of man. It is only the expansion of modern trade recently that has made the ignorant or rather the unthinking raise a hue and cry.

Railroad Notes.

THE Martin's Ferry (Ohio) Terminal Railroad and the Wheeling Bridge & Terminal Railway will be consolidated.

THE Baltimore & Lehigh Railroad Co. has ordered 50 new gondolas and box cars to meet the increased demand of its freight business.

THE railroad commissioners of Kentucky will soon commence their annual tour of inspection of the railroads in that State.

C. T. SCAIFE has been appointed superintendent of the Illinois Central terminals at New Orleans.

THE patent office has issued to the Boyden Brake Co., of Baltimore, three patents on automatic air-brake valves. These patents, which have been pending since September, 1889, are for what is known as a "triple-valve," which is applied to each car. They are simpler in construction and essentially different from the Westinghouse valve, and do not include what is

known as the "auxiliary brake." The Master Car-builders' Association have given the brake a very severe trial, and have found it to work promptly and surely.

THE Louisville, St. Louis & Texas Railway Co. is now having recorded a mortgage to secure an issue of \$5,000,000 of bonds. The principal object of the new issue is to take up all former issues and so consolidate the indebtedness of the road. The outstanding bonds of the company are \$2,440,000 of first mortgage 6 per cent. 30-year bonds due 1917 and \$250,000 of 6 per cent. 30-year second mortgage bonds due the same year. The Louisville, Hardinsburg & Western Railroad, which is leased perpetually by the Louisville, St. Louis & Texas, has \$630,000 of 6 per cent. first mortgage bonds due 1919 outstanding.

THE stockholders of the Illinois Central will consider at the annual meeting, to be held in Chicago on October 12, a proposition to increase the capital stock from \$45,000,000 to \$50,000,000 by a new issue of 50,000 shares of \$100 each. The stockholders are to have the privilege of subscribing at par for the new issue at the rate of one share to every nine shares registered in their names on September 20. The board of directors will recommend the adoption of the proposition.

THE Savannah, Americus & Montgomery has gross earnings of \$47,974.17 for July of this year against \$36,170.07 for July of 1891. The expenses were \$28,833.18 for July of 1892, and \$23,672.25 for the same month of last year. The net earnings increased \$5,988.20.

THE Louisville & Nashville has gross earnings of \$414,190 for the third week of August, an increase of \$11,770. The Missouri, Kansas & Texas for the same time has gross earnings of \$208,489, an increase of \$31,038.

IN the operating expenses of the Chesapeake & Ohio for the fiscal year ending June 30 there was included a large amount for absolutely new work, but which, in view of the high standard of efficiency now reached and the provisions made for all the improvements necessary during the current year, will, to a great extent, no longer be added to the figures for operating the property. The effect of this is already shown in the statement of the road for July, the gross earnings increasing \$13,104 and the operating expenses decreasing \$51,923. The gross earnings are \$877,216; operating expenses, \$575,419, and net revenue, \$301,796, an increase of \$65,027.

THE United States Court has appointed T. Jones Stewart, as representative of Houston county, Miss., receiver of the Gulf & Ship Island Railroad, with authority to raise money by the issuance of certificates and to put in repair that portion of the road now running and extend it as contemplated by its charter.

AT a meeting of stockholders of the Galveston, Harrisburg & San Antonio Railway, held at Houston, Texas, on the 20th inst., the following directors were elected: C. P. Huntington, I. E. Gates and Charles Babbridge, of New York; E. P. Hill, J. Kruttschnitt, G. W. Van Vleck and C. C. Gibbs, of Texas. At the meeting of directors the following officers were elected: President, C. P. Huntington; vice-president, J. Kruttschnitt; secretary, John Bagnall; treasurer, P. Huder; assistant secretary and treasurer, Charles Babbridge.

JUDGE MARSHALL J. CLARKE, of Atlanta, Ga., has appointed September 3 to hear arguments on an application for a receiver for the Atlanta & Chattahoochee River Railroad Co. A temporary injunction has been granted restraining interference with the company and its property until a final decree of the court. Dr. J. B. Baird, D. W. S. Elkins, Dr. W. P. Nicolson and others are the petitioners.

LUMBER.

[For lumber market reports see pages 96 and 97. In the Construction Department, on pages 98 and 99, will be found a complete record of new mills and building operations in the South.]

In the Memphis District.

[From our own Correspondent.]

MEMPHIS, TENN., August 30.

The Lumber Exchange at its meeting last week in a measure reorganized, and there will be more strict regulations so far as relates to dealings between local men

and cement. This is looked upon as but the first of a large number of manufacturing plants that will be placed at the terminus of this line under the inducements offered by its officers and owners.

There was an incipient strike among the plumbers here this week, but it was mutually settled after a day or two. This is not a good atmosphere wherein to breed strikes and lockouts. Another little trouble started at the large stave and cooperage works at Humboldt, Tenn., but it was not a success, having been amicably settled before it got large enough to be recorded.

tion, owing to the revolution of the disc under the pressure of the saw. The upper disc is adjustable in position by a rack and pinion movement. The capacity of the machine is for stock twenty-inches wide, and it will cut to the centre of ten inches thick. A number of minor points make this resawing machine one of the most complete in the market.

The same concern manufactures a band resawing machine with 48 inch wheels and having the same general arrangement for feed gear, but with a tilting table and generally designed for lighter stock.

This machine is suitable for sawing stock up to eighteen inches wide and to the centre of five inches thick.

A 3-inch French saw is shipped with the 54-inch machine and a 1½-inch with the lighter type, although the wheels will take a 4-inch and 2 inch respectively.

One of the special advantages of these machines is that the saw is set so close to the feed rolls that 6-inch stock may be easily handled.

The larger machine weighs 3,500 pounds and the 48-inch 1,700 pounds, both being built according to the standard of the John A. White Co. apparatus, with every part numbered and interchangeable.

Manufacture of Wood Pulleys.

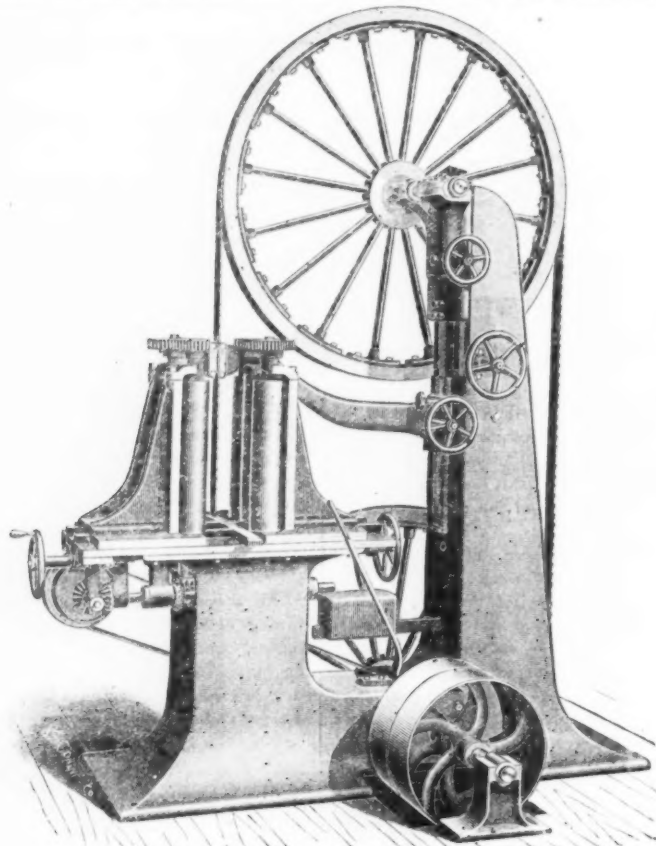
A great industry employing much capital and labor, and one which has kept pace with the times in improved product

the shaft where it was intended to run, and almost impossible to move when it finally was completed.

Force of circumstances compelled their use frequently then. To-day those old pulleys make a novel impression when found in some old mill or disused factory. They were of the old school, and a modern mechanic when he sees them adds one more to the list of things he is thankful are of by-gone times.

As times changed and ingenuity was brought to bear on this branch of mechanics, several factories for their manufacture sprang up and put the then improved wood pulley on the market. All engaged in the business had more or less trouble, crude ideas and machinery, and to this day many an ironman can be found who rejoices in the fact of these partial failures and hails them as the advent of a returning wave of opinion in favor of his iron pulleys. He forgets the march of progress in all departments of construction—the big dry-kilns, modern woodworking machinery and special lathes, and if he would think of the immense stocks of wooden pulleys, all split, lighter and cheaper than his, with interchangeable bushings, making one pulley go as far as thirty of his, I infer that he would turn his attention to some other branch of the iron trade.

As soon as they became an established article of commerce many faults were found with the pulleys offered. Rivalry at once sprang up to furnish a better article.



NEW WHITE BAND RESAWING MACHINE.

and the country mills, largely cutting off those who persist in selling to consumers and contractors. Mr. Jordan, manager of Williams & Co., has been president ever since the organization of the exchange, but positively refused a re-election, and J. W. Clapp, of Bassett & Clapp, one of our heaviest retail firms, was elected president, and R. J. Darnell, of the firm of I. M. Darnell & Son, the largest hardwood shippers here, was elected vice-president, thus giving the exchange the full strength of both branches of the trade. The treasurer and secretary were re-elected. The membership was increased, and the exchange starts out stronger than ever.

The large stave factory and cooperage works owned by the Goyer-Adams Co., at Little Rock, caught fire at midnight, August 28, and were totally destroyed; loss about \$30,000, partially insured.

The first plant to be put up on the line, or rather at the terminus, of the Raleigh electric road has just been arranged for under the auspices of the Commercial Association. It is a cotton manufactory, which will make cotton batting, carpet lining and other lines of cotton products, and will also manufacture woolen yarns, shoddy, etc. The mill will commence with fifty hands and increase as business will warrant. Dennis J. Griffin & Co., of Boston, are the owners of the plant, which will be under the management of Noah W. Speers, Jr., of Memphis, who has for some years past successfully run a batting factory. They have secured a plot of ground near the power-house of the road 300 feet square. The building is to be 50x200 feet, two stories high, built of corrugated iron and roofed with gravel and

New White Band Resawing Machines.

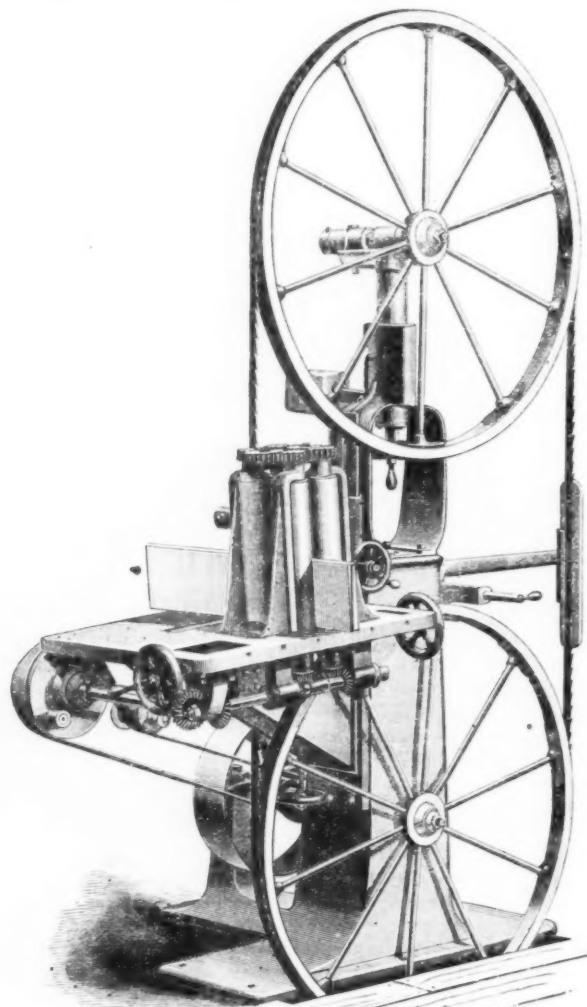
The economy of band resawing machines over the use of circular saws is day by day becoming more thoroughly recognized among woodworkers, and the increased skill of manufacturers in producing wide band saws of the requisite strength and toughness has fortunately kept pace with the demand for first-class resawing machines.

A specially solid and compact machine of this type (and we believe the largest manufactured in New England) is shown in the accompanying cut. It is built by the John A. White Co., of Dover, N. H.

The wheels are fifty-four inches in diameter with steel shafts, cast-iron hubs, steel spokes, malleable iron shoes and rubber-covered wood rims. All the usual adjustments for both lower and upper wheels are easily made while the machine is in operation, and the speed of the feed rolls may be varied as desired.

A noticeable feature of this machine is in the arrangement of the reducing gears for the feed mechanism, a patented form of differential gear being employed, by which a reduction in speed of thirty-six to one is obtained in the space ordinarily occupied by a single pair of bevel gears.

The feed rolls are six in number, all positively driven and started and stopped instantaneously by a hand lever under the immediate control of the operator. Both the lower and upper wheel guides are of the revolving disc pattern, the back of the saw resting against the face of a steel disc five inches in diameter at a little distance from the edge, so that a maximum surface is obtained with the slightest possible fric-



NEW WHITE BAND RESAWING MACHINE.

and constantly reduced price, is the manufacture of wooden pulleys. To a greater or less extent they have always been used.

Old millwrights can recall the clumsy affairs they nailed and glued together, with the face strips running in line with the shaft, some with webs and some with arms, perhaps using iron flanges or the hub and spokes of an iron pulley, and all the tedious and laborious work built right on

The first pulleys were heavy, awkward and poorly balanced. The finish was rough. Some had solid webs, which looked badly, hindered in erection and served no good purpose. Some had big round arms which were squared to fit in the rims and at the hubs, and this is the style which has generally developed into the pulleys now seen with two very wide arms supporting the rims at two points only. Faults were numerous, and the general appearance did

not commend them for use where neat shape was an object.

For all high-speed machinery, being lighter than iron, their consequent low centrifugal force was important, had not poor balancing overcome all advantages derived therefrom. Another objection was the heavy rim and also the wide arms, which latter created too much of an air current and consumed a great deal more power than they ever were charged with. Pulleys which wobbled did not add to their practicability.

Like all other branches of manufacture where there was an underlying principle of merit, all of these faults have been overcome one by one. We do not mean to say that to-day all makes of wood pulleys are perfect; far from it; but good pulleys can be had from the right parties and at a reasonable price. In this connection it may be well to state that there has always been an unjust discrimination between wood and iron; where a mechanic would blame himself for a broken iron pulley, or wooden pulley which broke under twice the load, was good evidence of the inutility of all wooden pulleys.

Happily, time changes all things. Study and care have produced as good results in this as in other modern appliances. Where the old cumbersome affairs once turned on slow shafting, now are seen speedy line shafts with light, split wood pulleys, their rims and narrow spokes running easier than the best of iron, and safer at high velocities. Many tests have also proven the better results of wood against iron, but there are enough other advantages without entering into this phase of the subject.

I do not wish it inferred that I recommend wood pulleys for wet places or open-air work; neither do I advise all makes for inside work. There are pulleys and pulleys, and of the making of pulleys there is no end. Many things enter into a decision in their purchase—the grip and strength of spokes and rims; the adaptation of the style to the work and speed of shafting, and the finish, general appearance and consequent beauty of the shop.

In regard to cost they are cheaper than iron; so, for the same money, larger pulleys can be used, which are better in many ways. In almost every comparison the wooden pulley is favored, and it is a shortsighted purchaser to-day who places his orders without first carefully selecting iron or wood, and if wood, the make of wood pulleys best suited to his purpose.—“Mill Manager,” in the *Wood Worker*.

Southern Lumber Notes.

AN association under the style of the Birmingham Lumber Dealers' Exchange has been organized by the dealers of Birmingham, Ala. The officers are: H. Hawkins, president; M. C. Reynolds, vice-president, and Sidney P. King, secretary. All the principal dealers of Birmingham and vicinity have joined the organization.

MR. J. S. JENKINS, of Anniston, Ala., writes that parties are in his city taking steps to work up the large oak tracts at or near St. Mark's, Fla.

THE Third Ward Lumber Co., of Houston, Texas, has commenced business.

THE steamship *Guy Colin* cleared from Pensacola, Fla., recently with a cargo of 1,493,000 feet of lumber, valued at \$15,400.

THE Seaboard Manufacturing Co., of New Orleans, lately made a shipment of 537,000 feet of cypress lumber and 56,000 shingles to Boston.

MESSRS. WEATHERBEE & HOOD, extensive lumber dealers at Pine Bluff, Miss., have dissolved partnership, and the business will be continued by Mr. Hood.

HIERONYMOUS BROS., of Mobile, Ala., are overhauling their saw-mill plant.

H. A. J. UPHAM, of Milwaukee, Wis., has purchased 18,000 acres of yellow pine

timber land in Louisiana from Robinson & Lacey, of Grand Rapids, Mich.; also 7,000 acres of yellow pine lands in Rapides parish, La.

THE Kearney (Ark.) Lumber Co. is building two and a-half miles of additional logging road.

THE Bodcaw Lumber Co., of Stamps, Ark., has completed the construction of nine miles of railroad into some timber land which it proposes developing.

THE Spanish steamship *Cortes*, from Cienfuegos, has arrived at New Orleans and will load with staves for Oporto, Portugal.

THE St. Mark's (Fla.) Lumber Co. is now engaged in building its new saw mill, which is to have a daily capacity of 150,000 feet.

THE Isabella Lumber Co., of Kentwood, La., has secured contract to cut 1,250,000 feet of lumber for the new grain elevator to be built at Southport by the Illinois Central Railroad.

MESSRS. ROBERT SIZER & CO., of New York, have contracted for the entire output this season of the Gardner & Lacey Lumber Co.'s mills at Georgetown, S. C.

MR. JOHN NOBLES, a New Orleans lumber inspector, has made a purchase of 6,000 cypress logs that will cut about 450,000 feet of lumber.

THE Neuse River Lumber Co., of New Berne, N. C., intends increasing its capital to \$50,000.

J. W. JAMES has contracted with Wm. Curphey, of Vicksburg, Miss., to supply 2,000,000 feet of ash logs and 1,000,000 feet each of oak and cypress logs for the latter's mill.

MESSRS. A. P. TAYLOR and D. M. Russell have about completed a saw mill of 25,000 feet daily capacity at Matagorda, Miss., on the L. N. O. & T. R. R. The firm owns large tracts of cypress brake and other timber lands in the Delta, and will develop same. They intend to cut oak, cypress and ash.

THE Pickens (W. Va.) Lumber Co.'s mills are nearly completed, and will soon commence operations. The mills' capacity is 12,000,000 feet of lumber per annum.

THE William Farrell Lumber Co. has shut down its mill at Wrightsville, Ark., and removed the machinery and dry-kilns to Hinsley and placed it in its mill at that place. The output of the plant will be 65,000 feet daily.

COL. L. F. HUBBLE, of Lancaster, Ky., has purchased 10,000 acres of coal and timber lands in Pulaski and Laurel counties, Ky.

MESSRS. RITCHIE & CO., of Camden, Texas, have completed the purchase of 3,000 acres of oak timbered lands on the Ouachita river near Camden, and will cut the timber at once.

MESSRS. B. D. AVIS & CO., of Charleston, W. Va., have recently sold for Gen. Joseph Anderson, of Virginia, 30,900 acres of timber and mineral lands in Garrett county, Md.; also several other large tracts in West Virginia to Pennsylvania parties.

THE Chipola Lumber Co., of Pensacola, Fla., has resumed operations at one of its Marianna mills.

THE Fisher & Burnett Lumber Co. has completed its extensive saw mill plant at Renovo, Miss., and will at once commence operations. The company will handle only hardwoods, and expects to cut about 5,000,000 feet this season. Its lumber will be obtained from about 30,000 acres of timber land in Bolivar, Sunflower and Coahoma counties which were purchased several years ago.

TWELVE miles from St. Augustine, Fla., on the line of the Jacksonville, St. Augustine & Halifax River Railway, a large lumber mill has been started on an island in Twelve Mile swamp. The mill has a

capacity of 20,000 feet per day, and is well equipped. The company operating this is the Builders' Supply Co.; capital stock \$25,000; Heth Canfield, president; H. Walton, vice-president, and George Old, secretary.

THE first shipment of the large purchase of timber made some weeks ago by the Bridgeport Lumber Co. arrived at Bridgeport, Ala., last week. The logs are generally of an unusual size, and many of them contain from 2,000 to 3,000 feet of the choicest oak timber.

THE South Arkansas Lumber Co., recently organized at El Dorado, Ark., has obtained control of 10,000 acres of timber land which it proposes developing. Machinery for a complete mill that will cut 40,000 feet of lumber daily has been purchased and will at once be erected. The company expects to have its mill in operation by October 1st.

A Convenient Dump Wagon.

The dump wagon is not so generally employed as its usefulness deserves, due



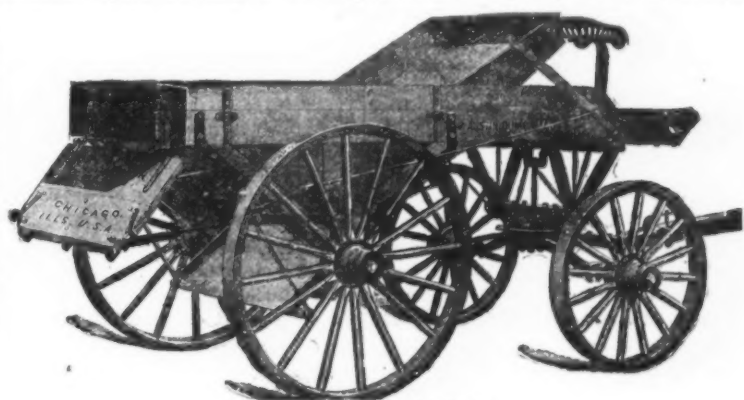
A CONVENIENT DUMP WAGON.

probably to the fact that as a rule a dump wagon is too unwieldy a machine for general use. The accompanying cuts illustrate a dump wagon manufactured by the F. C. Austin Manufacturing Co., Chicago, Ill., who claim that it possesses all the features of desirability in a dump wagon—it is easily and quickly dumped, is strongly made, and can be turned short.

To contractors and others having large quantities of earth to move and haul long distances beyond the range of the drag

which brings the cost of loading to less than two cents per cubic yard. By actual test the New Era grader has loaded 150 wagons per hour for several hours.

The wagon is loaded at an expense of two cents per cubic yard. Careful estimates show that the cost of loading scrapers, either drag or wheelers, is much more, and when a team and driver have a given distance to haul, if a drag scraper it moves one-quarter, if a wheeler one-half a yard, while the dump wagon takes about three



A CONVENIENT DUMP WAGON.

scraper, the dump wagon is almost indispensable. There is a great saving of money and time in its use as compared with an ordinary wagon with dump boards. The great disadvantage of handling earth on common wagons is the time consumed and the employment of an extra man at the dump. Aside from earth work, the dump wagon is employed for hauling crushed stone, brick, sand, street sweepings, etc.

On earth work the maximum saving is made when loading dump wagons by the New Era grader and wagon loader, a machine manufactured by the F. C. Austin

times as much as a wheeler, or at one-third the cost.

INDIANAPOLIS (Ind.) people are complaining that some cattle sent there recently from the Southwest have Texas fever. Many of the animals were slaughtered and fed to the people before the disease was discovered. Since that time all affected stock has been quarantined.

It is reported that large bodies of lead ore have been found at Blue Springs mines, Tenn., and Cleveland (Tenn.) parties have purchased the adjoining property and propose to carry on mining operations.

Manufacturers' Record.

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BALTIMORE, SEPTEMBER 2, 1892.

Notice to Advertisers.

The last forms containing advertisements
are closed on Tuesday afternoon. New adver-
tisements or changes should be received not
later than Tuesday noon to ensure attention
in the issue bearing date of the following
Friday. Reading matter should be in our
office on Wednesday, although late news can
be received early Thursday morning.

THE coal trade of the West is ably re-
presented by *The Black Diamond*, which is
published in Chicago. Ordinarily the first
page of the paper is devoted to a detailed
summary of trade conditions, but the issue
of August 27 comes to us with this terse
advice in the centre of a broad expanse of
white paper:

Buy Coal Now. Prices Advancing.

H. A. BISCHOFF.

Editor Bischoff has certainly adopted a
novel expedient for an emphatic warning
of the results of the Reading anthracite
combination.

COMMENCING with our issue for October
7, we shall make the first paper in each
month a special monthly number. We
purpose to make these monthly issues of
extra size and of unusual interest, so that
those who do not have the time to study care-
fully the growth of the South and its in-
dustrial development as they are set forth
so fully in our regular weekly issues will
still be able to have a broad and compre-
hensive view of the South once each
month. The interest of these monthly
numbers will be enhanced by numerous
special features, and we trust that a large
circle of new readers may thus be reached.
But this will not be accomplished at the
expense in any particular of the regular
features of the weekly issues, which will
be fully maintained and extended as op-
portunity shall offer. The subscription
price of the monthly MANUFACTURERS'
RECORD is one dollar per year.

ON July 1 of this year there were about
537 boats and nineteen barges filled with
Pittsburg coal, and owned by Pittsburg
shippers, tied up in the New Orleans mar-
ket, which extends from Natchez to New
Orleans. With one exception this was the
largest stock ever held at these landings,
and the capital thus invested in coal and

lying idle amounted to about \$1,650,000.
These are the figures given by a Pittsburg
shipper, who is quoted in *The Black Dia-
mond*. This coal is worth from 31 to 33
cents per barrel, or about \$3 50 per ton, in
the New Orleans market, and the shipper
who gives the figures states that Alabama
shippers have contracted to put down 40,000
tons of coal into New Orleans by rail at
\$2.70 per ton. It is rather surprising that
the New Orleans market should have been
held by the Pittsburg shippers for so many
years when the market offers so many in-
ducements to Alabama miners. Now that
a regular export trade in coal from Mobile
has been established, the New Orleans
market and every market on the Gulf ought
to be controlled beyond question by the
Alabama producers. New Orleans is a
large market in itself, consuming some-
thing like 450,000 tons of Pittsburg coal
annually. This is a trade worth having,
and Alabama shippers could not do better
than cultivate it.

Basic Steel in Virginia.

The greatest necessity of the Southern
iron industry is a larger local consumption
of crude iron—that is, the establishment of
industries in the South that will work pig
iron into more highly finished products,
better able than pig iron to bear the costs of
transportation to Northern and Western
markets. The rolling mills industry of the
South is growing steadily, and the auxiliary
industries, such as pipe works and general
foundries, are increasing in number, but
still by far the greater portion of the pro-
duct of the Southern furnaces is shipped to
distant markets in its crude state. The
question of steel making has been discussed
from many points of view and numerous
feasible plans have been suggested for the
utilization of Southern pig irons for this
purpose. Beyond doubt the basic process
and its variations are best suited to South-
ern conditions as they now exist and are
known. It has been suggested that by a
combination of the acid-Bessemer and
open-hearth processes the pig iron made
in the Birmingham district of Alabama
can be made into a good grade of steel
with profit, and the details of this plan
have been pretty thoroughly discussed and
criticised. Thus far, however, nothing
tangible has come out of this scheme.
Money and enterprise alone are needed to
carry this plan into successful operation,
and time will bring this about.

There appears to be an excellent oppor-
tunity in Virginia for the manufacture of
open-hearth basic steel; in fact, plans were
prepared for a considerable plant of this
character at Buena Vista and the founda-
tions were begun, but the recent financial
crisis halted the work and it has never
been resumed. Of the probabilities of
this particular enterprise we know nothing,
but the possibilities of the industry in Vir-
ginia are as great as ever, and the need of
such an auxiliary to the great pig iron in-
dustry of the State is ever increasing.

Edmund C. Pechin, of Roanoke, Va.,
who is peculiarly well fitted to speak upon
this subject, has contributed to the *Iron
Trade Review* an article on the possibilities
of basic steel making in Virginia, from
which we quote his conclusions:

After a careful review of the whole situation,
and with our present knowledge of processes
and materials, I must maintain that high grade
open-hearth basic steel can be made in the great
Valley of Virginia at a lower cost than anywhere
else in this country. Some of the reasons for
this conclusion are as follows:

Practically the only ores in Virginia available
for iron making are the brown ores of the Pots-

dam series (Nos. 1 and 2) and of the Oriskany
(No. 7). Twenty-two furnaces are dependent
upon these ores, and with the exception of three
or four, all are first-class modern furnaces. The
total furnace capacity is hard on to 600,000 tons
per annum. With the exception of a very mod-
erate local demand lately developed, this iron,
both foundry and forge, has to find a Northern
and Eastern market.

The ordinary forge iron of the whole district
will run silicon .3 to .7; phosphorus, .4 to .8;
manganese, from 1.5 to 3 per cent. A furnace can
be run month in and month out certainly guaran-
teeing a forge iron with silicon under one half of
1 per cent. An English steel maker to whom I
showed analyses of our Virginia irons taken at
random exclaimed: "There can be nothing bet-
ter than these; they are ideal irons for open-
hearth basic work."

Although the brown ores as mined on a com-
mercial scale are silicious, carrying from 8 to 28
per cent. silica, they reduce with extraordinary
ease, allow a large output and with Pocahontas
coke give, as above stated, an iron with extremely
low silicon. The sulphur is infinitesimal. It is
safe to say that with the current price of Virginia
irons a well designed and located open hearth
steel plant could make billets at an outside cost of
\$15 per ton. I get at this by having before me an
itemized statement of the actual cost from pig
iron into billets elsewhere. Further than this, to
make an iron to sell on the general market re-
quires an admixture of Cripple Creek and Gossan
ores, which at present increases the cost. For a
first class basic pig the mountain ores (No. 1),
which are the lowest in cost, can be used alone,
and make a cheaper iron than is now made.

We believe that Mr. Pechin is not too
sanguine about this matter, nor has his
enthusiasm led him beyond the possibili-
ties that exist. The disposition of the
product of a basic open-hearth steel works
in Virginia is the only phase of the subject
that is open to question, but we believe
that the output of more than one large
plant, if in the form of plates and struc-
tural material, would find a ready market
in the South at profitable prices. The
North is now drawn upon for everything
in this line that is now consumed in the
South, and a well-equipped mill in Vir-
ginia would enjoy an undoubted advantage
both in the matter of transportation and
the costs of manufacture.

The Southern Railroad Situa- tion.

There are at this time two very encourag-
ing features in the Southern railroad situa-
tion which stand out in strong relief
against the feeling of depression that has
followed the Richmond Terminal wreck. The
United States Circuit Court in Dallas
has arrested the mischievous operations of
the Texas railway commission and given to
the people of that State promise of relief
from the anti-corporation curse which has
paralyzed all commercial and industrial
interests in that State during the past year.
Although the Texas railway commission
has been in operation only since June
20, 1891, it has wrought injury to the
State in that brief time which can
only be repaired by years of hard work on
the part of the railroads, the business men
and the people of Texas. The creation of
the Texas railway commission was the
result of a political controversy in which
the control of the adjustment of railroad
rates by State authorities was made the
chief issue. The predominance of the
granger element, misled by political agita-
tors, threw the control of the State govern-
ment into the hands of the anti-corporation
party, with consequences that have been
disastrous to every material interest in the
State.

As soon as organized the commission
commenced the readjustment of railroad
rates, and in nearly every instance sweep-
ing reductions were made in the tariffs.
The commissioners appear to have been
guided in their actions entirely by their
own judgment and in a purely arbitrary

manner, and their rulings upon rates have
been without regard to the conditions of
traffic or the rights of the railroads. The
effect of such a policy upon the earnings of
the railroads may easily be imagined. The
actual loss to the Texas & Pacific Railroad
in seven months was over \$212,000; in
eleven months the St. Louis Southwestern
earned about \$29,000 less than its operating
expenses, and the Tyler Southwestern
failed to make both ends meet by about
\$44,000. The International & Great
Northern was unable to earn the inter-
est upon its bonds last year, and
the stockholders were called upon to con-
tribute \$1,000,000 of new capital this year.
The Gulf, Colorado & Santa Fe showed an
actual loss arising from the rates fixed by
the commission during eight months to
February 29, 1892, amounting to \$300,000,
and the company was compelled to borrow
a large amount of money. The trustees of
the bonds of these railroads brought suit
in the United States Circuit Court for the
restraint of the commission from making
or enforcing any tariffs or collecting any
penalties from the railroads.

The injunction granted by Judge Mc-
Cormick is temporary, and it is quite prob-
able that the case will be appealed to the
United States Supreme Court. The ruling
of Judge McCormick is eminently fair and
just, and inasmuch as he based his decision
upon the ground that the commission had
no right to establish "unreasonably low or
confiscatory" tariffs, it would seem that
the Supreme Court on appeal would be
likely to take a similar view. There seems
to be little doubt that the rule of the dem-
agogue in Texas is broken and that the
vast possibilities of that great State now
lie open for legitimate development.
Judge McCormick's action should inspire
confidence in the minds of outside capi-
talists and hope in the hearts of all who
have the real and permanent welfare of
Texas at heart.

Next in interest to the overthrow of the
Texas railway commission is the transfor-
mation that has been wrought in the East
Tennessee, Virginia & Georgia Railroad
under the administration of Receiver Fink.
This railroad has long been notorious be-
cause of its mismanagement and its com-
placent indifference to the rights and
necessities of its patrons. Instead of
stimulating development along its lines
and giving encouragement to local indus-
tries, the company has done little or
nothing to induce such development.
This has been most noticeable on the main
line between Chattanooga and Bristol.
Middlesborough has been practically shut
out from Southern coal markets by ex-
cessive freight rates, and other points have
suffered in a like manner. While the
managers of the various lines of the system
have in many cases endeavored to encour-
age enterprises in their territory, the under-
lying policy, emanating from headquarters,
and the natural result of the stock-jobbing
operations which have been indulged in by
its leaders, has been to avoid giving active
assistance to any towns or enterprises
along the line. There is good reason to
believe that freight rates have been made
to favor operations in which some of the
larger stockholders were interested and to
exclude competing concerns.

Major Fink has come in under the
authority of the court and has proceeded
to reorganize the business of the road on a
business basis. Already he has adjusted
the coal rate from Middlesborough and
placed the mines there on an equal basis

with Jellico for Southern trade, and rates from all points are being readjusted on an equitable basis as rapidly as can be done. A heavy shipper over the East Tennessee road recently said that Receiver Fink was the "first real railroad man" who had ever been in control of this system, and that where hitherto fair rates had been asked with almost a certainty of refusal, now there was an equal certainty that they would be granted if reasonable.

It is evident that Major Fink's purpose is to place the system on a paying basis, and his efforts to increase shipments and encourage enterprises along the line are a proof that he realizes that while there may be more money in through business, the backbone of success is in the amount of local traffic furnished by the towns along the line. To help them is to help the road. In this way the Norfolk & Western, the Louisville & Nashville and other systems have gradually been building the foundations of permanent success.

These two phases of the Southern railroad situation are full of encouragement and promise.

Utilizing Waste from Ore Washers.

Economy of labor and the utilization of every by-product form the secret of success in every branch of industry that is based upon the use of crude material. We have frequently called attention to the wastes of material in various lines of manufacture, and have suggested means by which this loss can be reduced, but while there is a steady movement toward improvement in such things, it is neither as rapid nor as general as should be. Manufacturers are slow to spend money on an improvement unless the beneficial results to be obtained thereby can be clearly demonstrated by actual successful experience. When there is the least suspicion of experiment there is a universal inclination to wait for somebody else to make the trial.

The fine clay washed out from brown hematite ore is a waste product that contains elements of value which, so far as we know, have never been utilized in any systematic manner. The subject has been discussed at various times, but beyond talk little has ever been done. The disposal of this clay is one of the annoying problems with which the operators of ore washers have to contend. Whether it is run into a stream or into a mud dam it is equally troublesome, and in time causes considerable expense in further arrangements for its disposal.

Where a mud dam must be used it is customary to secure a piece of land of the size deemed desirable and build a dam around it, leaving a flush gate at end nearest a little stream. Into this dam the refuse from the washer is run. The heavier particles settle near the entrance, and the lighter ones are carried on. When the water rises to the level of the flush gate, which is made so as to be adjustable in height, it flows away. Gradually the sediment fills the space, and the dam must then be raised. This is repeated until the height is as great as is considered safe. Then a new plot of ground is secured and the operation repeated. The old dam takes a long time to dry out, sometimes four or five years, or even longer, and in the meantime is a nuisance to the property lying beyond it from the chance of the dam breaking and flooding the fields with clay slime, or, when the top has dried, there is danger of stock or even people getting on

it and breaking through the crust into the soft mud beneath.

Where the operator is allowed to run his slime into a stream, the heavier particles of clay deposit in the bed wherever a stone or bend makes an eddy, while the lighter ones are carried in suspension and make the stream muddy and unsightly for a long distance. This is objected to by farmers and others living along the banks, and is the source of constant trouble between them and the operators. While with such a large amount of finely divided material carried in suspension it would not be possible to collect every particle and leave the water clear, it is both possible and practicable to retain a very large portion of these slimes, and, moreover, to render them more or less valuable at but slight expense.

If the slimes were passed through a series of large and rough settling tanks the coarser particles and those of intermediate fineness could be secured, and, as the clay is highly aluminous and plastic, would be eminently suited for use in making the finer quality of brick and terra-cotta and similar products. This is not a visionary statement. An experiment with some clay deposited in an eddy below the washers in the Cripple Creek region of Virginia showed that when molded and burned it was strong, smooth, and the sample experimented upon turned a light red color, though the burning was done in an open fire. There is such a wide range of articles which could be made from clay of this character that it is well worthy of attention.

The finest particles, which are generally of a very light yellow color, are well suited as a body for paints, and if dried and burned, take a color varying from deep yellow to medium red, and could be used alone or mixed with other colors to give the shade desirable.

In some districts the washings from the ore are of other colors than that mentioned, sometimes being a clear pink, changing to deep red on burning, and in others a yellowish brown, changing to dark bluish brown on burning. All of these colors have a value varying from \$10 to \$50 per ton, and considering the small outlay which would be necessary to retain them, the matter becomes well worthy of consideration.

"Turn Texas Loose."

By Richard H. Edmunds.

"Turn Texas Loose" is the motto of the people who are seeking to break the fetters that have bound that imperial State and stayed its progress. A few years ago Texas was growing in population and wealth as few States have ever grown. Every train that entered its borders was crowded with the best class of settlers; new railroads were opening up to development its vast natural resources; the towns were fast becoming prosperous and populous cities; the farmers were yielding a yearly increasing output of corn and wheat and cotton; capital from Europe and from the North was pouring into the State, and the world pointed to Texas as a place of wonderful prosperity, and of a future bright almost beyond description. In an evil hour the agrarian spirit was aroused by political demagogues seeking only their own advancement, and under their influence the legislature enacted laws that suddenly checked the inflow of capital, stopped railroad building, paralyzed the growth of the towns and cities, caused immigration to almost cease and greatly depressed the value of every acre of land in the State. The change was so great

that no one can understand it except those who have seen Texas under these two conditions.

"Turn Texas Loose" say the business men of the State who are fighting for commercial freedom, and the first victory has been won in the decision of the federal court declaring the Texas railroad law unconstitutional. The effect of this will be beneficial to every interest in the State. It will once more restore to railroad owners some control over their own property; it will give renewed confidence to capitalists and railroad builders; it will help to "turn Texas loose" and make possible a return of that marvelous progress which the State was making before the evil days of unjust railroad and alien land laws. And now if the people of the State will elect a governor who represents its best business interests, and forever retire to private life the demagogues who have flourished for the last few years—men who have been a curse to their whole State and who can never undo the harm which they have already done—Texas will turn itself loose for a period of prosperity greater even than it knew in the past. Its seaports will become the termini of many railroads, which will be crowded with Western produce seeking a foreign outlet; its vast areas of timber lands will steadily enhance in value; its farmers will become more prosperous; its cities will become the centres of great industrial interests. Austin's great dam will be utilized in furnishing power to many factories, Llano's rich iron ores will furnish the material for furnaces and mills, and progress will be seen everywhere.

Let Texas be congratulated that the United States Court has broken one of the fetters that bound its business interests.

Convict Labor in Tennessee.

[From a Staff Correspondent.]

OAKDALE JUNCTION, TENN., Aug. 27.

The trouble with the miners at Coal Creek has been fully described by the newspaper reporters who have been at the front, but none of them have appeared willing to allow the miners a word in defence of their conduct. That they have done wrong the miners admit, but they felt that there was no other way in which to secure attention to the evils of the convict lease system. For years the miners and people of East Tennessee have opposed the lease system, but the middle and western part of the State did not realize, or did not want to see, how harmful it was, and merely looked at the large sum of money realized from the lessees. Consequently East Tennessee has been powerless, and while all good citizens have strongly opposed any recourse to arms, there have not been wanting lawless ones to stir up more discontent, nor have they failed to find followers among mountaineers and miners who cared as little for law and order as themselves. Using both threats and persuasion, they secured the aid of nearly all the miners, and last year's trouble was the result. At that time Governor Buchanan practically pledged himself to call a special session of the legislature for the purpose of abrogating the convict lease law, but when the legislators met they merely passed a more stringent election law, and also an act making it a crime, punishable by long imprisonment and heavy fines, to interfere in any way with the operations of convict lessees.

Their failure to do what was as good as promised stirred up all the miners and citizens in the Coal Creek district, and while a large majority even then objected to taking the law into their own hands, they were intimidated by others and compelled to give their assistance. This was undoubtedly wrong, and is universally regretted. It has resulted in the death of many men, some of them the ringleaders and others who were compelled to join

them. Others have been arrested, some may be convicted of murder and punished with death, and others imprisoned and possibly, as convicts, have to work in the very mines they were endeavoring to free from this class of labor. The militia has lost some men, and sorrow has been carried to many a home in the State. The loss has been to all, and the share of the miners is not the least. Hundreds of men are away from their homes, and dare not go near them; they have no work and no money nor food for their families. Women and children are starving, begging for a mouthful of food; they have no help, and can secure none. The militia is constantly on the lookout, and should any men return they are locked up and held for trial. Those who can give bail and get out have no work, and cannot get any if the convicts are to remain. All must give up their homes and move away. Those who are convicted will have to leave their families to starve, and those who are freed will be little better off. With no work or chance of getting it, there is a prospect of want and misery in this district that is dreadful to think of.

The miners were wrong in contending by force with the law, and the sad consequence may be called a punishment, but the act was done in the hope of forcing the repeal of a law which is obnoxious to every citizen who has given it and its bearing upon labor thoughtful consideration. To take care of its own convicts would cost the State a large sum of money, it is true, but every citizen owes it to himself to see that convicts do not compete with free labor. If they do, there is no inducement to a workingman to come into the State, and its development will be retarded in proportion to the number of convicts employed.

There is one kind of work in which convicts can be used for the public good and where their work will be of benefit to everyone—that is, on the public roads. Tennessee has as poor roads as any State in the Union in proportion to its population, and the question of bettering them has been agitated for some time. Wise and thoughtful men have pointed out the advisability of using the convicts in making and maintaining the roads, and the horrible experience at Coal Creek, which has brought before the people more strongly than ever before the reprehensibility of the convict lease system, may help to forward this much wished for improvement.

In the meantime miners and their families are suffering, and, as all sympathy is for the other side, there is little prospect of help for them, and the guilty and innocent suffer alike. It is a sad sight to see children and women crying for food, and this is, unfortunately, a common condition there just now. H. S. F.

It is said that a Spanish market building is to be erected at Lima, Peru, which will have a frontage on every side of 394 feet. The building will be made of steel, two stories high, with a large tower rising in the centre of a side court. The facing will be terra-cotta and opaque glass. A San Francisco firm, Rix & Birrell, have secured the contract for \$952,000.

THE Little Rock Mining & Smelting Co., of Little Rock, Ark., has been incorporated with a capital of \$500,000 by B. H. Gedge and D. C. Williams, of Anderson, Ind.; S. R. Williams, of Nashville, Tenn.; R. K. Pitkin, of Joplin, Mo., and G. F. Martin, of Little Rock. Dixon C. Williams is president; B. H. Gedge, secretary and treasurer, and R. K. Pitkin, general manager. The company has purchased 1,000 acres of land in the northern part of Pulaski county, Ark., and will work the zinc ore existing therein. The old Kellogg mine is included in the property purchased.

COAL AND COKE.

Coal in Missouri.

[From the Preliminary Report on Coals by the State Geological Survey.]

The total production of coal in Missouri for the year ending June 30, 1891, was 2,650,028 tons, valued at \$3,480,867. According to Bulletin No. 10 of the eleventh census, Missouri ranks second as a coal producer among the States west of the Mississippi river, Iowa being first, with a production of a little over 4,000,000 tons. Colorado is ranked next after Missouri, her production being 2,544,144 tons, and Kansas is fourth, with a production of about 2,200,000 tons per annum. After these no other of the Western States approach Missouri in the amounts of coal produced. According to the same bulletin Missouri ranks ninth as a coal producer among the States of the Union, Pennsylvania leading off with the magnificent figure of over 80,000,000 tons, Illinois being next with about 12,000,000 tons, Ohio third with nearly 10,000,000 tons, West Virginia next with over 6,000,000 tons, and then Iowa, Alabama, Maryland and Indiana preceding Missouri in the order given.

According to the list of coal mine operators appended to this report there are, in all, 385 individuals and corporations engaged in mining coal. Of these, one organization mines about a fourth of the total amount produced each year; ten companies mine together nearly two-thirds of the total amount, and sixty individuals and companies mine together about five-sixths of the total, leaving for 325 individuals and companies the production of one-sixth.

The principal coal producers in the order of the amounts of their products are: The Rich Hill Coal & Mining Co., the Western Coal & Mining Co. and the Lexington Coal & Mining Co., these three being under one management, with mines in Bates and Lafayette counties; the Kansas & Texas Coal Co., with mines in Macon, Ray and Linn counties; the Keith & Perry Coal Co., with mines in Henry and Bates counties; the Richmond Coal Co., with mines in Ray county; Loomis & Snively, with mines in Macon county; the Mendota Coal Co., with mines in Putnam county; the Interstate Coal & Mining Co., with mines in Randolph county, and the Randolph Coal Co., with mines in Randolph county.

The conditions affecting the market of the coals west of the Mississippi river are, in some respects, different from those in the eastern part of the country. The Western bituminous coal field is surrounded on all sides by large expanses of country, destitute of merchantable coal. These great areas, with their constantly increasing population and needs, must, under natural conditions, draw their supplies of coal largely from the mines of Iowa, Missouri, Kansas, Arkansas, Indian Territory and Texas. The area of workable coal is also restricted in Kansas, Arkansas, Indian Territory and Texas, only a small portion of the coal measure areas there being productive. East of these areas their coals are brought into competition with the coals of Illinois, Indiana, Kentucky and Ohio in the North, and with those of Tennessee and Alabama in the South; even the anthracites of Eastern Pennsylvania are sold within the very limits of these Western coal fields on account of their special adaptabilities. The natural facilities of transportation provided by the Ohio and Mississippi rivers enable the coals of Western Pennsylvania and Ohio to compete very successfully with the geographically much nearer Western coals, especially along the lower Mississippi. Further, through the distribution of railway lines and adjustments of rates, Illinois coals force the competition

line much farther west than would seem possible from geographic considerations. Thus the territory affected by this competition to the east is large, and it will probably always be considerable, though subject to variations.

Towards the west, however, there stretches a great area of country in Nebraska, Kansas, Indian Territory and Texas which is not only destitute of coal, but which has, further, a sparse supply of timber to answer as a substitute for such mineral fuel. This is especially the case in Kansas, and its effect upon the Missouri coal industry is important. West of this coal-barren area are the deposits of Dakota, Wyoming, Colorado and New Mexico, which are, to a certain extent, competitors in the market and which may become more so in the future. It is not to be anticipated, however, that this competition with the coals of Missouri and adjacent States will reach very far east, for the latter coals are generally superior in quality than those farther west, which are largely lignitic, and the supply of superior coals in Colorado and New Mexico appears to be not more than is needed to satisfy the home needs and the more imperative demands for coal still farther west. Thus the coal barren area surrounding the Western bituminous coal fields may be looked upon as a most promising market for the future, especially that to the west, where the population is destined to increase rapidly in the next few years with a proportionate increase in coal consumption.

In addition to the foreign market, however, there is in Missouri a good home market—one which is destined to increase greatly in the future and which will always be a steady consumer of coal and the most substantial supporter of the coal industry. The coal fields of Missouri are not located in a mountainous, rugged or sterile country; on the contrary they are in a country of moderate elevation, with gentle undulating surface, where bluffs and steep declivities occur only along the largest streams—a country with a most fertile soil in a well advanced stage of cultivation. It is already well populated, a network of railways traverses it, small towns are numerous and cities occur at short intervals. These conditions furnish consumers for the coal at the very mouth of the mine, they cause small operations to be numerous and to be profitably prosecuted, and they further permit the mining of coal for local uses under conditions which would not be profitable for the general market. In addition, these conditions furnish opportunities for obtaining labor, and inducements for retaining it, which are entirely absent in many coal mining regions.

The railways of the State constitute, without doubt, the largest class of consumers of coal. Hence the greatest single use to which coal is put is for the production of steam in locomotives; but for manufacturing purposes a large amount of coal is also used in steam production. Domestic consumption in stoves and furnaces ranks next in importance. For the production of illuminating gas a few coals of the State have been roughly experimented with, but not with generally satisfactory results, and very little of the coal product is used for this purpose. Thus coal from the vicinity of Moberly has been used there at the gas works, and when well purified the gas from it was excellent, but the cost of purifying it from sulphur was too great. The coal mined at the Hamilton Coal Co.'s shaft in Caldwell county has been tested for gas production, and is reported to have yielded an abundance of gas, but it would not coke in the retorts, and therefore could not be profitably used. The coal mined at Trenton, in Grundy county, has also been tested with similar results. In Henry county are several coals which have been used for gas production with reported favorable results. The thick coal bed

south of Lewis Station is such a coal, and also that from the Pitcher mine, south of Clinton. These coals have been used not only in the immediate vicinity of the mines, but have been shipped to remote points in the State for this special purpose. The coal mined at Minden, Barton county, also gives promise of being a gas producer, inasmuch as coal from the same bed mined at Cherokee and other points farther west in Kansas is largely used for that purpose.

Cumberland Coal Shipments.

The shipments of coal from the Cumberland region for the week ended August 27 and for the year to that date have been as follows:

Companies.	Week. Tons.	Year. Tons.
Borden Mining Co.....	4,761.07	146,195.07
Consolidation Coal Co....	21,354.45	581,157.15
Union Mine.....	3,677.11	101,656.03
George's Creek Coal & Iron Co.....	7,746.12	182,541.08
Swanton Mining Co.....	.....	5,048.00
Potomac Coal Co.....	2,743.09	91,398.16
Franklin Cons. Coal Co.	1,935.11	39,598.10
Piedmont Cumb. Coal Co.	.....	5,405.00
Barton & George's Cre & Valley Coal Co.....	4,253.14	127,690.14
Big Vein Coal Co.....	2,110.13	43,886.03
Anthony Mining Co....	96.00	6,211.00
W. Va. C. & P. (Elk Garden Mines).....	6,017.15	223,191.01
Atlantic & George's Crk Coal Co.....	426.16	28,569.12
Davis Coal & Coke Co....	1,301.00	72,979.00
Thomas Mine.....	1,852.05	67,242.02
Davis and Elkins Mine..	1,506.08	46,597.11
Cumb. Coal Co. (Doug las Mine).....	905.00	43,341.00
Elk Garden Big Vein Mining Co.....	1,006.05	25,921.07
Hampshire Mine.....	492.17	11,031.06
American Coal Co.....	7,019.05	244,151.15
Maryland Coal Co.....	167.69	6,698.08
New Central Coal Co....	3,071.04	128,822.00
Big Vein Coal Co.....	.....	.....
Total.....	78,232.00	.....
Previously.....	2,322,533.07	.....
Aggregate.....	2,400,765.07	2,400,765.07

COKE SHIPMENTS OVER WEST VIRGINIA CENTRAL & PITTSBURG RAILWAY.

Companies.	Week. Tons.	Year. Tons.
Davis Coal & Coke Co....	1,392.00	28,071.00
Thomas Coke Ovens.....	190.00	5,627.12
Cumberland Coal Co....	375.00	11,570.00
Total for week.....	1,957.00	.....
Previously for year.....	43,302.12	.....
Year to date.....	45,268.12	45,268.12
Same period last year..	.....	49,938.14

Coal Shipments from Norfolk.

The exports of coal from Norfolk, Va., as given below represents the clearances from Lambert's Point, Va., by William Lamb & Co., agents, from January 1, 1892, to August 25, 1892, inclusive:

No. tons exported coastwise.....	31,860 1/2
Br. stmp. Kennett, bunker coal.....	201 1/2
Br. stmp. G enfield, bunker coal.....	221
Br. stmp. Alford, bunker coal.....	174 1/2
Total amount for week ending August 25, 1892.....	32,457 1/2
Total amount to August 18, 1892, inclusive.....	938,963 1/2
Total amount to August 25, 1892, inclusive.....	971,421

The Strike at Pocahontas.

As noted in our issue of August 19, the Pocahontas miners, after accepting the change in schedule made by the company, again left their work and demanded that the cars be reduced from ninety-two cubic feet, the new size, to 79 86 cubic feet, the size formerly used. In default of this they want an increase in price for filling the larger cars. The company mines an average of 1,200 cars per day, and has heretofore used smaller cars and paid more than any other operators in the district. This present strike was started, not by the miners, but by agitators in the district who wished to force the other companies to reduce the size of their cars to that formerly used by the Southwest Virginia Improvement Co. A "convention" has been held by the miners, and it is reported that a lawyer, who has made his living by instigating the men to commence damage suits against the company for injuries, real or imagined, has advised the miners to organize and fight the operators all over the

region. If a general strike takes place the operators have decided to hold out to the end and, if necessary, secure workmen from elsewhere.

Coke from Campbell County, Tenn.

The general impression has been that the coal from Campbell county, Tenn., in the neighborhood of Buckeye, which is about six miles from Oakdale, would not make coke. Experiments show, however, that while it is not as good coking coal as other Tennessee coals, still in its natural state it makes a fairly good fuel, and properly prepared for the ovens it would no doubt make a still better one.

The Pioneer Coal & Coke Co., whose home office is at Knoxville, Tenn., and whose mines are at Buckeye, have erected four badly constructed ovens and have tested a few carloads of coal, the coal being taken from three seams, and being entirely slack or slack and nut mixed without any crushing or washing. Local foundries have been using a quantity of the coke made by this company. The difficulty with it seems to be that it does not carry a burden equal to the Pocahontas, but it is believed that when the coal is crushed and properly burned it would make excellent coke. This coke sells readily at \$2 50 a ton. The parties owning the property are going very slowly, but have no doubt that they will ultimately produce as good a coke as the better brands of Tennessee and Alabama.—*Connellsville Courier.*

Coal and Coke Notes.

The soft coal shipments for the week ending August 29th of the Norfolk & Western Railroad were 53,042 tons, an increase of 3,624 tons over the shipments for the corresponding week of 1891, when the movement was 49,408 tons. The total increase since January 1, 1892, has been 121,386 tons, and total shipments 1,702,157 tons. The Beech Creek road also continues to show an increase of coal tonnage.

AN excellent quality of hard coal has been found on the property of Jno. A. Shifflett and Eli Collier, near Nortonville. Arrangements for development of the find will no doubt be made.

IT is reported that 200 coke ovens will be built at Chickamauga, Ga., at once, as the result of the Chattanooga Southern Railroad having made a connection with the Chickamauga & Durham.

R. K. WARREN, of Mobile, Ala., who is selling coal in Texas, reports that during the coming season he will deliver over 196,000 tons of coal through the port of Velasco. Besides this amount, two cargoes or more per month will be received at Chambers & Marmion's steam coal elevator.

THE Southern Transportation Co. has been organized in Pittsburg, Pa., by O. A. Blackburn, E. J. Wood, W. J. Wood, W. C. Wilmot and R. W. Wilmot. It is the intention of the company to ship Pittsburg coal down the river to New Orleans, and thence by steamer to Cuba and the West Indies.

OWING to the heavily increased taxation on cigar factories in Cuba and the liberal inducements offered by some Florida land companies, there is a possibility of a number of these factories moving their plants to this country. Tampa and Ybor City, Fla., are two points which they are looking toward.

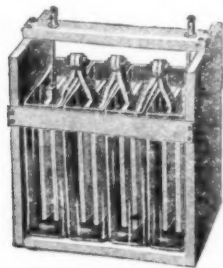
GEN. E. P. ALEXANDER, ex-president of the Central Railroad of Georgia, has been appointed a member of the government board of engineers to report on the obstructions in Columbia river, Ore. General Alexander is a graduate of West Point, served as chief of engineers in General Lee's army, and commanded the engineering and artillery operations at Gettysburg.

ELECTRICITY.

The Simpson Storage Battery.

The bright future laid out for the domestic application of electric energy by enthusiasts has received the usual number of setbacks that generally accompany the introduction of revolutionary inventions. The impossibility of securing current at the desired point has been the greatest obstruction to the general introduction of electricity into homes and offices for the convenience of the many would be patrons. The primary battery has aided to a considerable extent in showing the utility of electricity for domestic purposes, but it has been found wanting in its general application.

Until recently the initial cost of the storage battery has been too high to allow



THE SIMPSON STORAGE BATTERY.

the general public to experiment with its utility.

Many are the letters that have been placed on file by manufacturers and supply houses of electrical apparatus, beseeching them for information regarding batteries for all imaginable purposes. Recognizing this "long-felt want," the Simpson Electric Co., of Chicago, has placed on the market a small storage battery that has been specially constructed for light work, such as dental or medical purposes or for operating a motor to run lathes, fans, sewing machines, etc. The battery shown in the illustration contains four cells with nine volts pressure and a capacity of twenty ampere hours for each cell. These cells can be charged from a gravity battery, incandescent or arc circuit.

Retailing Electricity.

English papers record the invention of a reading lamp for retailing electric light to passengers by "pennyworths," and the system has been successfully tried on the Metropolitan District Railway. So successful indeed has the experiment proved that the company has, it is stated, entered into a contract with the Railway Electric Reading Lamp Co. for 10,000 of these lamps to be fixed in its equipment. Similar contracts are also, it is stated, being negotiated with other railways. The mechanism by which this will be accomplished is contained in a box five inches by three inches. Upon putting "a penny in the slot" and pressing a knob an electric light is obtained which burns for about half an hour, at the end of which time it is automatically extinguished, but can be relighted by the insertion of another penny. The light, which is about three candle-power, is concentrated by a shaded reflector, which may be turned within certain limits so that the light may be directed to suit the position of the passenger. One of the most remarkable features of the instrument is its honesty, as it is so arranged that in case of a failure in the supply of electricity the machine automatically returns the coin to the operator. Another noticeable feature is that should the lock of the apparatus be tampered with a bell is automatically set ringing in the guard's van. The whole of the lamps placed in one carriage are supplied with the electric current from an accumulator placed under one of the seats of the carriage, which is thus entirely self-contained, and capable

of being detached from the train without the light being affected. The accumulators can be easily changed, and will be replenished at charging stations near the terminus. It is intended that four lamps shall be fixed in each compartment, which makes from sixteen to twenty lamps in each car, and all these lamps will be connected in parallel circuit with the accumulator.—*Railway Review.*

Electrical Notes.

Z. T. WHITE, president of the Brush Electric Light Co. at El Paso, Texas, has purchased machinery in New York with which to enlarge their plant. At present the company are using the Swan and Heisler systems, but by September 15 the Westinghouse system will be substituted. This will give them three times their present capacity and probably reduce the cost per light. A project is on foot to run the International street car line by electricity.

THE Chesapeake & Ohio, which was among the first of the railroads to adopt electricity for lighting trains, is about to replace the dynamos heretofore used with electric storage batteries.

CAR horses will soon be at a discount in Savannah, Ga., as electricity has been and is being introduced on several of the street railways of that city. The latest company there to supersede horse-power with electricity is the City & Suburban, which has equipped its entire system.

Phosphate Matters.

Notwithstanding the severe competition between South Carolina and Florida phosphates the market appears to be holding up and the outlook for future business brightening steadily. The French Phosphate Co. is pushing forward steadily with its work and is erecting a number of dwellings for employees. The Tampa company has a centrifugal pump at its mines on the Alafia river which lifts the phosphate from the bed of the river and loads it into barges which are towed to the works on the Hillsboro river near Tampa. The Peruvian, Alafia, Marvinia and Lighthall companies are all at work in the same district.

All of the companies are putting in improved machinery and expect to greatly reduce the cost of mining. The Tampa company employs about twenty men at wages ranging from \$1.25 to \$1.50 per day, and has a daily output of about eighty tons. This is worth from \$4 to \$6 per ton at the works, and at present the company has nearly 7,000 tons sold ahead to Baltimore and foreign parties.

Around Dunnellon there is a good deal of activity and work is progressing steadily. About 4,000 tons Dunnellon phosphate are side-tracked at Fernandina awaiting the arrival of chartered vessels, several of which are overdue.

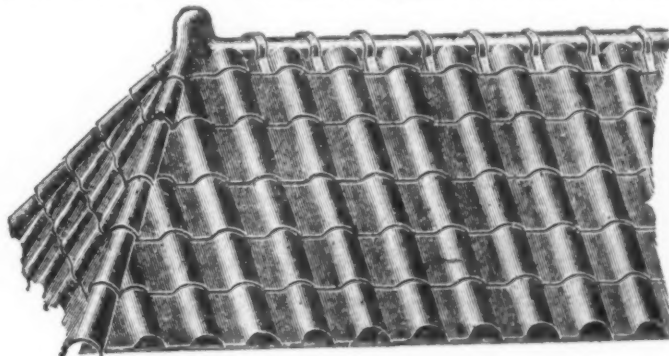
The Plant railroad system is doing everything in its power to aid the development of the phosphate region, and now is spending nearly a million of dollars in building wharves and storage bins at Port Tampa for the accommodation of the phosphate companies.

It has been stated recently that South Carolina phosphate miners have combined against the Florida article and are getting the quotations of the latter and then underselling them. It is the desire of some of the larger companies in both States to effect an organization of all operators for the purpose of controlling the market, and it is suspected that the action of the South Carolina men is a preliminary meant to scare the weaker miners into joining. There is no doubt but that a mutual agreement all around would be for the general good, but it is a question as to who would control it and whether it would not merely be used as a lever to hold down the smaller companies.

Robert H. Partridge, who has been employed in the United States Geological Survey of Alachua, Suwannee, Bradford, La Fayette, Levy, Marion, Sumter, Citrus, Hernando, Pasco, Lake, Polk and Hillsborough counties of Florida, has returned to Washington to prepare his report. In the fall he will return to Florida and continue his work. In speaking of the generally accepted theory that phosphate deposits, especially the hard rock, occur in pockets, Mr. Partridge says that he has given this matter careful study, and his belief is that the deposit is continuous, being only cut away in places by rivers and valleys. He further says that it is his belief that large deposits of phosphate exist in places where nobody suspects them, and that frequently, after being told by residents that there was no phosphate near, he has investigated for himself and found, in some cases, quite large deposits. Mr. Partridge's report will thoroughly cover this ground, and will be of the greatest interest and value.

A New Sheet Metal Roofing Tile and Siding.

The metal roofing tile illustrated in the accompanying section of a roof has recently been placed on the market by the firm of Fred. Bishoff & Co., of Chicago. The construction of the tile is such that the fastening is covered with at least one inch seam-lock, making leakage or the rusting of nails an impossibility, nor can they be affected by the heat or cold, as ample provision is made for the expansion



A NEW SHEET METAL ROOFING TILE AND SIDING.

and contraction of the metal. These tiles are made of the best quality of black steel, English or American tinplate and copper. The tin and steel tile receive a heavy coat of paint resembling the color of the original Spanish tile and present one of the handsomest roofs in existence. One-half more roof timber is required for the structure where clay tiles are used than for the metal tile, which is usually an important item for consideration in the cost of buildings.

The sheet metal siding can be applied by any mechanic, and after painting cannot be distinguished from stone, and is manufactured in various sizes of the best tinplate and steel. The siding is very adaptable for stores and dwellings and adds very much to the appearance of any building on which it may be used.

This firm was the successful bidder for the roofing of the fisheries building, World's Fair.

The Galveston Artesian Well.

At Galveston, Texas, there is being bored an artesian well which on June 10 had reached a depth of 2,920 feet, and has now been sunk to 3,067 feet. When completed the well will be cased its entire length and be six inches internal diameter. The work is being done by the Galveston Artesian Well Co., and J. W. Byrnes, of that company, has furnished the *Engineering News* with the following description of the work as it progressed:

The process used was the revolving and

jetting as patented by Chapman Bros., of the American Well Works, Aurora, Ill. A revolving table is used, by which the pipe is clamped and revolved while being sunk. A column of water is driven through the pipe under a pressure, which forces the borings up the outside of the pipe. The boring is done by a cutter made of inch steel plate in the form of a barrel saw, with a toothed bar crossing the shoe. The pipe revolves on a swivel head; to which it is screwed and into which the hose passes. By a combination of blocks and gearing the pipe is perfectly balanced, and the available force of the engine used in handling it is increased about 140 times.

The well was started with a 22 inch casing, by which the surface sand was gone through to a depth of fifty-seven feet. Inside this casing a 15-inch pipe was then sunk 870 feet, and within this a 12-inch pipe for 1,500 feet. It was intended to carry this size pipe to 2,000 feet, but, owing to an accident, it was not possible to do so. Inside this a 9-inch pipe was run to a depth of 2,363 feet. Inside this 200 feet of flush joint 8-inch pipe was inserted, and within this 212 feet of flush joint 7 inch pipe, reaching a depth of 2,600 feet. A 4 inch pipe with a 6-inch shoe was then run down and a depth of 2,920 feet reached. At this depth water bearing sand was struck and the 4-inch pipe withdrawn, leaving 320 feet of uncased well. Into this a 6 inch flush joint pipe is being forced.

The derrick used for handling the pipe is ninety-eight feet high, with sills 12 by 15 inches and fifty feet long. The corner col-

umns are 3½ by 15-inch and 3½ by 12 inch yellow pine. The girts are 2¼ by 8-inch, all securely bolted together. The head-block is made of four steel plates 1 by 12 inches, five feet long, outside of which are two 12 by 15-inch pine sticks, all bolted together. There are five sheaves eighteen inches in diameter, 2½-inch groove, with 3-inch steel pin. The head-blocks and derrick will sustain 300 tons, but will not be subjected to a greater weight than ninety tons.

The contract price of the well is \$75,000 completed to 3,000 feet and finished with 6-inch pipe. Beyond this depth \$25 per foot will be paid. The cost of the plant when ready to commence work was about \$12,000. Water pressure is obtained from three pumps with a combined capacity of 1,500,000 gallons per day, and capable of furnishing a pressure of 250 pounds per square inch.

If the city council decide to continue the depth beyond 3,067 feet, which it has now reached, a 4-inch pipe will be sent down to the desired depth. There has been a cave in some of the upper strata which has shut off the water, and the contractors are now preparing to cut off the 12, 9 and 6-inch pipes.

J. M. INGLE has returned from New Mexico and El Paso and brought with him some excellent samples of lithographic stone. He states that there is a large quarry of the stone which is easy of access, and that the stone could be laid down in El Paso for about \$4 per ton.

MECHANICAL.

Notes on Machine Shop Practice.

By Albert D. Pentz.

To begin with, are machinists or any other class of workmen prepared, or are they preparing themselves, for the altered industrial conditions toward which they are pushing, and at which it is possible that they may arrive? Before this century is rolled up, if the organization of workmen shall continue at present rates, the labor element of the American industries will be a unit, and as such will either assent to or dissent from any proposition affecting its interests. If this tendency be not checked it certainly will lead toward either anarchy or socialism. Should united labor greedily consider its interests alone and ignore those of all other of the various classes into which society is now divided, the result will be chaos—anarchy. Labor will have jumped into the fire. The abuse of unlimited power and greed in grabbing every advantage in sight will destroy it. It is true that some very rank examples have been set for labor in this direction, but labor will not be permitted to follow them, for while we will long submit to an old conservative abuse from a familiar direction, we instantly rebel at the same abuse in a new form or from a new source. If, however, the unit labor shall first study to harmonize itself with the employing unit, and together they shall seek to find the shortest route from the producer to the consumer, and thus eliminate every unnecessary intermediate cost to the buyer, the trend will be toward socialism. Now, if American workmen are unprepared to accept either one or the other horn of this dilemma, then they must disorganize, seek work as individuals, deal with their employers each man according to his separate merits, and become again amenable to the laws of supply and demand as in the old regime.

If your planer with a wide tool and broad feed will not make as good a surface under the same conditions as another, probably it is because the machine is not stiff enough. One point in this connection all planer men do not know—the cut must be heavy enough to keep the tool within the metal so as to hold it down, otherwise it will spring up and ride after the extremely sharp edge is gone, especially at hard spots or where a hand has rested on the work. On the other hand, too deep a cut produces a rough, chattered job and wears the cutting edge rapidly.

The angle given by makers of twist drills to which their lips should be ground is that which gives the edges of the lips the effect of being straight lines. This angle, perhaps sixty-two degrees, with the centre line through the drill, is a good one for cutting, especially in cast iron or where the drill is used solely for enlarging a smaller hole previously made. Where the drill is used for making holes in solid steel, however, the penetrating edge on such drills are too obtuse, too blunt for rapid cutting, and should be more acute. The point aimed at in making drills is, or should be, the greatest mean efficiency for solid holes, as well as for counterboring for steel as well as for compositions like brass. Now it is evident that the benefits of an angle along the lips having the greatest efficiency for removing metal is set at naught if the junction of these lips produces an edge having penetrating power very much less than the cutting capacity of the lips. Hence, because it may ordinarily be impractical to have different sets of drills for different purposes, it would be best to experimentally find an angle which gives the greatest penetrating power consistent with sufficient strength

behind to fortify and prevent it breaking under heavy duty. Then make the groove of a shape to produce a straight lip line at its intersection with that angle. It is in penetrating speed that a drill is limited, and by its point. An angle, perhaps fifty degrees, bettering that most important particular, would not seriously take away from its counterboring efficiency. Most practical men know that a blunt drill does not make so straight a hole nor one so round as a drill more acute. Neither will it follow the hole it counterbores as truly. It certainly may more easily be changed in location by chipping on one side as its point is entering, but that benefit is more than overcome by the greater uncertainty of its staying right when it is once properly centred.

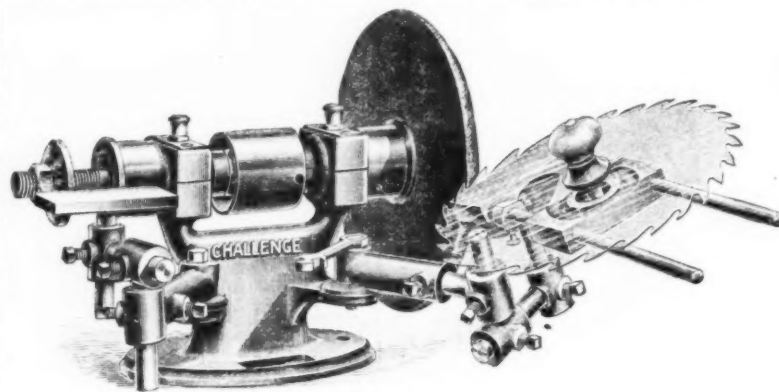
To prove that nine workmen in ten do not think of their work intelligently, all that is necessary to do is to examine the points they grind on drills for one particular alone, that of the backing off. All the backing off a drill actually needs is enough to clear the cutting edges on the lips so that at any ordinary degree of feed nothing behind these edges shall drag. For instance, a 1-inch drill cannot possibly be fed into metal so fast as to drill one inch deep in thirty-two revolutions. The penetrating point of such a drill will chew out a hole about three-eighths of an inch in circumference, and at this point, penetrating as it does as fast as every other part of the drill, the lips should theoretically be backed off at an angle that rises no more than one thirty-second of one inch in a length of three-eighths, one to twelve, that is not five degrees of angle. But, however, because of the impracticability of grinding the lips of drills to theoretical spirals, and because the most impractical part is just at the penetrating point, it is necessary to produce a greater angle in backing off than the theoretical one, perhaps double that angle. Hence, in the drill in question the angle should be ten degrees from a radial plane. It is fair to presume that while smaller drills have shorter penetrating edges, that because their feeds must be slower they will require no greater angle of relief, and ten degrees will answer for them also. Drills larger than one inch would have longer penetrating edges and would require comparatively easier angles. It, therefore, is not probable that any drill requires to be backed off to more than ten degrees of angle. An ordinary workman will back off anywhere up to forty-five degrees. The best way to grind a twist drill is first to shape the cutting edges to their proper inclination to the centre of the drill, then leaving the lips one-sixteenth of an inch thick, grind the remainder of the relief up about thirty degrees, then back off exactly as if it were a flat drill.

WHEN the building of fine American machinery was mentioned a few years ago, no other section but New England was thought of, and Waltham, Providence and Hartford were names that rose at once as denoting the places wherein the best was made. Good machinery is yet made in New England, but it has ceased to be considered necessary that a piece of work must have been formed within its borders to be a fine American product. Watches at least as good as those produced in Massachusetts are made in a little town in Illinois. Fine machine tools, the quality of which a few years since was considered special to Providence and Hartford, now are made as perfectly in Cincinnati, Cleveland and Milwaukee. It is true that a Yankee germ generally is the nucleus of these Western industries, but it seldom is more than that, for the natives soon train down to the work and the homesick exiles generally return eastward. Now, if youngsters bred on Western farms make the finest of mechanics and operatives,

there is no reason why those of the Southern section should be more backward than they. There are, on the contrary, elements, such as determination and persistence—abundantly shown in the war—in Southern character that fits machine development admirably, and machine work by being largely performed by automatic tools will suit the fatiguing character of the climate better than almost any other line of industry. The negro should make an ideal tender for automatic tools.

Challenge Saw Sharpener.

The machine shown in the accompanying cut is manufactured by the Appleton Manu-



THE CHALLENGE SAW SHARPENER.

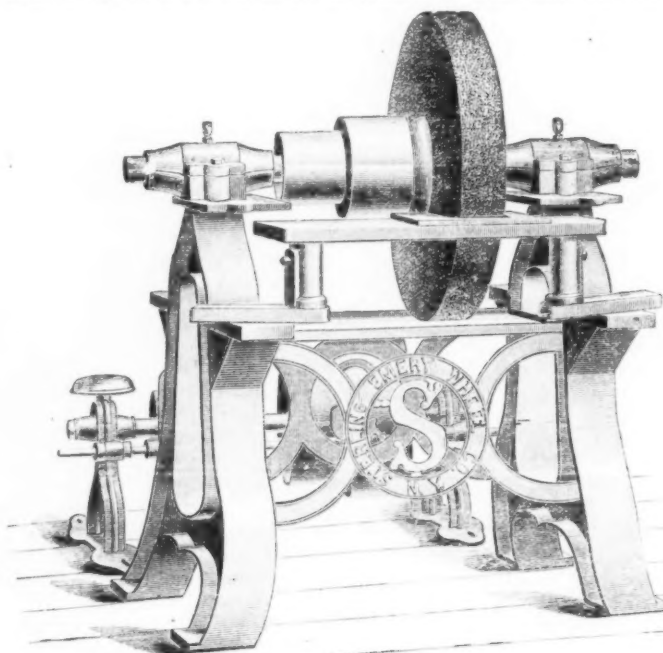
facturing Co., of Philadelphia, Pa., and is one of the most simple and effective saw sharpening and gumming machines made. It is easily adjusted to any size circular saw up to twenty four inches, and, as can be seen in the engraving, is suitable for either rip or cross-cut saws, and will sharpen at any degree or any shaped tooth without regard to the distance between teeth. The telescopic swivel rest supports the saw and enables it to be moved to any position needful to accomplish its purpose.

Near the wheel is a broad, flat rest ad-

and will be found useful for many jobs about the mill. The low price of this machine brings it within the reach of even the smallest users of circular saws, and those who still follow the old practice of filing will find upon trial that this produces better work in less time and at less cost.

Sterling Emery Wheel Machine

The Sterling machine "F" for one wheel, as shown in the accompanying cut, is one of the styles manufactured by the Sterling Emery Wheel Co., of West Sterling, Mass., and Tiffin, Ohio. These wheels are made from the highest grade of emery and corundum, and are made by a heat process.



THE STERLING EMERY WHEEL MACHINE.

justable to the gullet of the saw, and near it a stop operated by a set screw on one of the parallel rods to govern the depth of cut toward the gullet. The movable plate through which these rods pass has a stud upon which the saw is centred by the cone and jam nut above. In operation the knot is grasped and the saw carried forward until arrested by the stop; it is then revolved to the next tooth, and so on.

The rest for the saw near the wheel is graduated, therefore every tooth is sharpened exactly alike. On the other end of the spindle a flat-faced wheel can be placed,

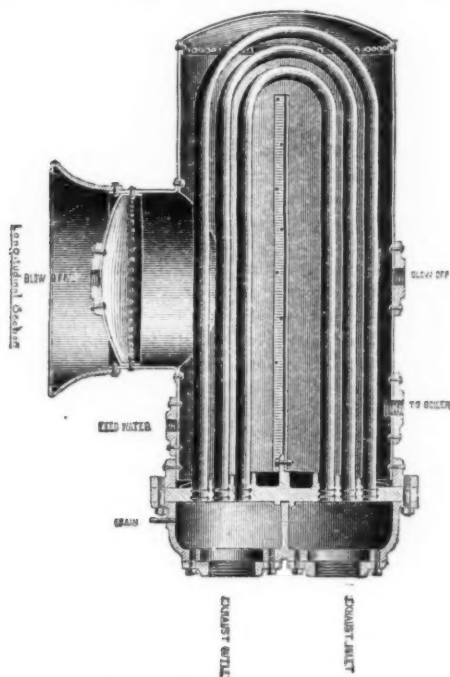
machine shown in the illustration occupies a floor space 3x30 inches. The spindle is fifty inches long, with a diameter in bearings of two and one-quarter inches and between flanges of two inches, the bearings being ten inches long and the flange ten inches diameter. From the floor to centre of spindle is thirty-one inches, and from bench to centre of spindle twelve inches. Cones on the spindle are eight inches and six and a-half inches diameter by five inches long. The machine is made for one 26-inch wheel, and weighs, with countershaft, 850 pounds. The counter-

shaft shown in rear of machine has a 40 inch spindle with tight and loose pulleys 10x6 inches, and cone pulleys sixteen and fourteen and a-half inches diameter by 5-inch face.

Stilwell's Close Feed-Water Heater.

For more than a quarter of a century the Stilwell & Bierce Manufacturing Co., of

give the result. However, knowing the character of plumbago, if the interior of a boiler could be painted with it in such a way that it would stay, it may be this would prove a remedy. I am satisfied also that the person doing so would kill two birds with one stone, as the scale could be easily detached. In a pair of cylindrical boilers 42x28 occasional applications of cylinder oil (mineral) and plumbago has



STILWELL'S CLOSE FEED WATER HEATER.

Dayton, Ohio, have made a specialty of manufacturing devices for heating and purifying the feed water for steam boilers. Their latest contribution to that branch of industry is the Stilwell patent close heater herewith illustrated, for which the following points of superiority are claimed:

The heating tubes are seamless brass, U-shape, and so fastened into the tube sheet as to be absolutely tight.

The base on which the heater stands serves also as a mud-well, or settling chamber, for the deposit of impurities, which can be readily blown off. Deposits of impurities in this settling chamber do not diminish the heating power of the heater.

The cold feed water enters the heater near to the steam-exit end of the tubes, thus offering the most favorable conditions for extracting the most heat from the exhaust steam.

The diaphragm which separates the shell into two equal sections compels the feed water to traverse the entire length of the heating tubes, and its exit from the heater is made at a point in close proximity to the incoming exhaust steam, thus insuring the highest possible temperature of the feed water.

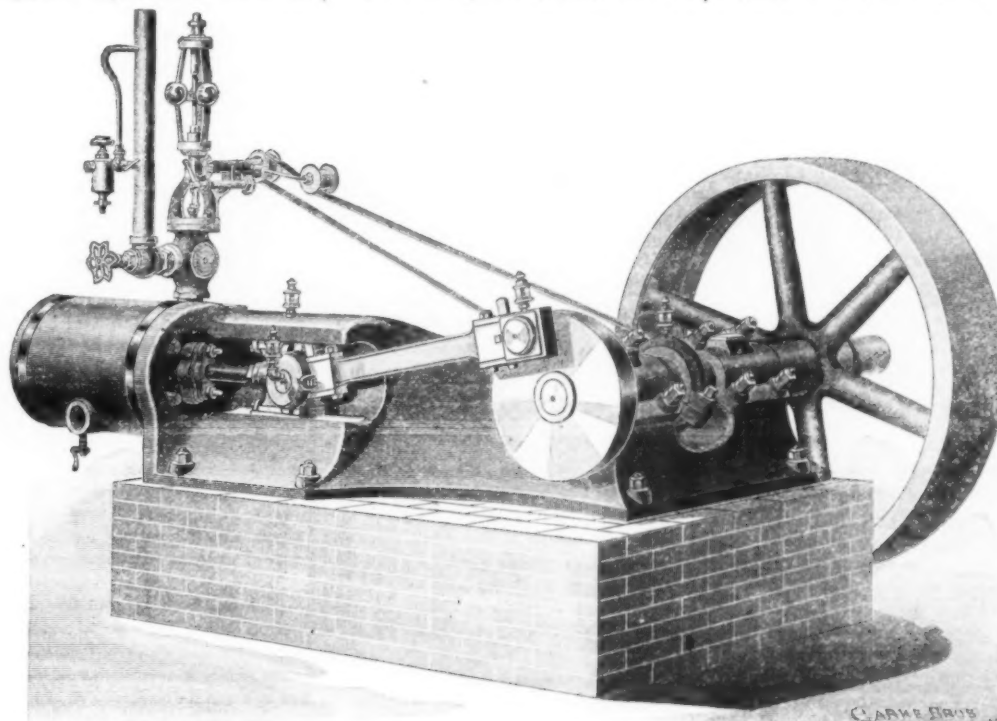
The construction of the heater admits of its being taken apart if necessary for cleaning; the tubes and tube sheet can be readily removed from the shell for that purpose.

Boiler Pitting Cured by Graphite and Oil.

In the *American Machinist* of July 28 Mr. T. T. Parker has a very interesting article regarding pitting in boilers. Besides some clever theories, he has this to say from a practical point of view: "A boiler of the porcupine persuasion pitting was found in the mud drum. Acting under advice, the drum was cleaned and scraped, after which it was painted with graphite mixed with cylinder oil. Measurements of the depths of the pits were taken, and six months after they were found no deeper and no new ones had shown up. Other parties have since tried this experiment in mud drums but it is too early as yet to

kept back corrosion on a trial of six months. Boilers were new when plumbago was used. The boilers which the new ones replaced were thrown out rotten from corrosion. The feed was mine water, as nothing else could be had."

In addition to Mr. Parker's remarks, we add that Messrs Harig, Koop & Co., Louisville, Ky., after experiencing more or less



A NEW SELF-CONTAINED ENGINE.

A Big Engine Contract.

From the *Evening Wisconsin*, of Milwaukee, we take the following account of an immense contract that has been taken by the Edward P. Allis Co.:

"The largest contract for stationary engines ever awarded in the world has just been secured by the Edward P. Allis Co.

"The contract calls for fourteen immense engines, with an aggregate of 20,000 horse-power, to be used by the Brooklyn Electric Railway Co. The engines will cost \$440,000. In addition the Allis Co. will make a number of heavy castings at a cost of from \$80,000 to \$90,000 for the Brooklyn Railway, so that the total work involves considerably more than half a million dollars.

"The contract for furnishing the engines for the Brooklyn Electric Railway powerhouse was awarded to the Milwaukee company last Friday, and calls for the construction of six 2,000 horse-power engines and eight 1,000 horse-power engines. The Allis people secured the contract in competition with almost every other firm in the country which is able to build engines of such size, and though the Allis Co.'s bid was the highest, it was favored above all others.

"The diameters of the cylinders of the compound 2,000 horse power engines will be thirty-two inches and sixty-two inches, and the stroke of these engines will be sixty inches. The 1,000 horse-power engines will have cylinders whose diameters will be twenty-six and forty eight inches and the stroke forty-eight inches. The steam pressure will be 140 pounds to the square inch. There will be one marked peculiarity in the engines which forms a new departure in the construction of electrical machinery. The armatures of the electrical generator will be by all odds the largest ever constructed, as they are designed about eighteen feet in diameter. Instead of using a fly-wheel on the engines, these armatures will take their place.

"Under a separate contract with the

"The largest deal for stationary engines preceding this one with the E. P. Allis Co. was one for 10,000 horse-power for a London corporation, which afterwards bought a plant of another 10,000 horse-power, making a total of 20,000 horse-power."

A New Self-Contained Engine.

We herewith present an illustration of an improved engine brought out by the W. C. Leffel Co., of Springfield, Ohio.

It will be seen that it is of the self-contained side-crank type, heavy, strong and graceful in design, the metal being so distributed as to insure the greatest strength and durability.

The cylinder is bolted to the head of main frame in a substantial manner, and the guides are cast with and made a part of the bed-plate. Heavy adjustable brass shoes on cross head are arranged to take up wear. The connecting-rod is forged, and is provided with heavy adjustable brass boxes, finished with wrought iron straps, keys, etc. It has a plain slide valve, the motion being transmitted to same through a rocker-arm in a simple and substantial manner. Great attention is given to all the working parts, and the engine is thoroughly well built throughout.

The difficulties attending the proper adjustment of an outstanding bearing have made this class of engines very popular, as they are self-contained and no adjustment of the outstanding bearing is required.

THE PAIGE Manufacturing Co., of Harri-man, Tenn., are making preparations to erect large buildings in place of the one recently burned down there. It has been decided to put up two buildings, one 300 feet long and the other 250 feet, with the boiler plant in between. At the time that the old building burned down the company had not placed much machinery in it, so their loss was much less than would otherwise have been the case.

STAUNTON, VA., is getting a good share of flour mills and bids fair to become quite a centre for this industry. In operation

trouble from rust and scale in the mud drums of their boilers, applied with great success graphited oil purchased from the Joseph Dixon Crucible Co., Jersey City. The mud drums were cleaned out and the graphited oil applied with swab, brush or anything handy to the joints and parts where the water enters the drums. Every four or six weeks this process is repeated with the most gratifying results.

General Electrical Co., of Boston, which will supply the electrical apparatus for the Brooklyn Electric Railway, the Edward P. Allis Co. will furnish the castings for the dynamos. This contract amounts to between \$80,000 and \$90,000. These two contracts together make the sum total of the work that the Allis Co. will do on the Brooklyn Co.'s plant exceed half a million dollars.

now are the City Mills, with a daily capacity of 200 barrels, and four mills belonging to the Star Mill Co. These are the Witz & Holt, the Bowling, the Patterson and the White Star, the latter 400 barrels capacity, just building. The total capacity of all the mills will be nearly 1,000 barrels per day, and will require over 4,000 bushels of wheat every twenty-four hours.

The Cyclone Pulverizer.

By Axel Sahlin, M. E., New York.

The development in crushing and pulverizing machinery has of late years been as marked as the advance in other applications of the technical sciences.

The millstone and the stamp, for so long the only available machines for reduction of solid substances, are yearly more and more crowded to the wall by ingenious machines adapted for special purposes. A general grinding machine does not exist any more than a general specific medicine, a panacea for all human ills. To draw a parallel: A large size Gates crusher has a capacity of 250 tons per hour. It receives the rock in its hopper, twenty tons at a time, and reduces it to macadamizing stone as fast as a new car can be placed in position to be emptied. An Alsing cylinder, lined with porcelain brick, filled with flint pebbles, must be revolved for several hours to grind only a few hundred pounds to an impalpable powder. Both machines are excellent for their purpose, though as different in their action as night and day. Between these two extremes are ranged a number of mills adapted for the various grades and comminutions. Jaw crushers and Cornish rolls, the various chasers and mills built on the principle of cylinders, or balls rolling over a metal track, burr stones, stamps and mortar mills, disintegrators and beater mills, all represent the impact principle of the mill while grinding the rock, while the Sturtevant mill, the steam and pneumatic atomizers and the Cyclone pulverizer are prominent illustrations of the attrition principle of mills in which the material is made, principally, to grind itself. It must not, however, be inferred that there is no wear on these mills. Wear cannot be wholly avoided in any machine.

The Cyclone pulverizer, in its present thoroughly redesigned and constructed form, is one of the finest grinding machines in the market, competing favorably for fineness of product with wet chasers and Alsing cylinders, but yielding a far greater amount of product than either of these mills. Besides, for finest grinding, such as is required for paint stock, graphite, barytes, carbonates, etc., it is also well adapted for reducing fibrous materials, such as asbestos, talc and wood pulp, or scaly substances like wheat, bran and sheet mica. This versatile machine has also been used successfully to disintegrate certain grades of asphaltum and bitumen, spices, barks and seeds of different kinds, as well as bone, tankage and phosphate rock. Some substances, however, it cannot reduce. Rawhide and rubber prove too tough; mustard seed contains too large a percentage of oil; excess of moisture also prevents grinding, and causes the mill to get clogged up. In common with other iron mills, it is also unsuited for preparing quartz and feldspar for use in fine pottery. These minerals are very hard, and sufficient iron is worn from the beater blades to slightly affect the color of the burnt glass. Many solid substances requiring only coarse reduction or granulation can often be more economically treated by simpler machines requiring less power. There is no economy in hitching a race horse to the plow; so with the Cyclone pulverizer, there are certain things for which it is not adapted, and certain requirements which again amply justify its employment. They can be classified thus:

- 1st. Great fineness and evenness in grinding.
- 2d. Difficulty or expense in screening the ground product.
- 3d. Fibrous or flaky nature of the material.
- 4th. Great toughness and tenacity of the material.
- 5th. A tendency to pack or stick together.

6th. A mixture of two or more substances of different specific gravity which it is desired to separate.

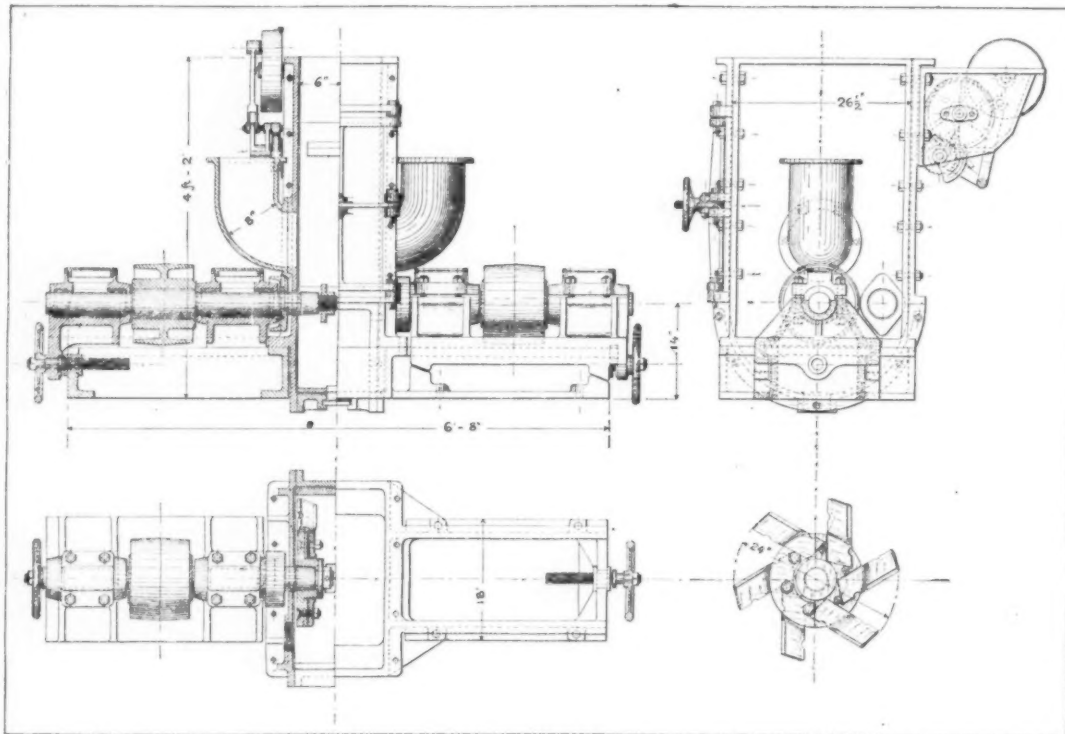
All or either of these conditions will justify the use of the Cyclone pulverizer and make it a most economical and valuable tool, while for coarse granulation of ores, etc., it might prove no more efficient than simpler machines consuming less power.

The pulverizer consists of a central cast iron chamber open at the top, and accessible through a rapidly operated airtight door. This chamber is bolted to a very substantial iron base plate. On either side of the same is placed a shaft extending into the chamber and supported by swiveled, self-oiling pillow blocks of a special patented design. The shafts are driven at high speed in opposite directions by means of pulleys placed between the pillow blocks. Attached to the ends of the shafts extending into the chamber are two steel fans of the construction shown. The hub consists of two soft steel discs bolted together. Between these are held reversible blades of hardest Hadfield manganese steel. These blades are the only part of the pulverizer subject to wear and

is arranged so that the upper conveyor carries the settled material back to the pulverizer, while the lower one delivers the material in a suitable bin or receptacle. A series of gates, spaced about every two feet along the conveyors, makes it possible to place the upper and lower conveyor box in communication. By opening a gate ten feet from the mill the material settled in these first ten feet of chamber is returned for regrinding, while the finer material that settles beyond the open gate is delivered at the packer. By successively opening gates at a greater distance from the mill a finer product may be obtained. The air which passes the fan still contains a considerable percentage of very fine dust. This is conducted into a large chamber with muslin sides, where the dust is gradually deposited. While the air partly escapes through the muslin, partly is drawn off through pipes connecting the upper part of the cloth room with the bottom of the pulverizer, whence the circulating air current again will carry off and deposit a new load of ground material. The process is continuous; no dust escapes, and the fineness of the dust is absolutely controlled without screens. In other cases it is found

As an instrument for extra fine grinding and for handling difficult materials the Cyclone pulverizer is remarkably effective. When used on easily reduced materials which require only coarser comminution the machine is not so economical, as the power required is somewhat greater than that consumed by simpler mills that will do this class of work well enough, though they would be utter failures if employed on the finer work properly belonging to the Cyclone mill.

The mill as built to-day is no more like the original machine built three or four years ago than is the present automatic steam engine like the primitive but yet highly creditable mechanism with which Watt astonished the world. Both the Cyclone mill and the steam engine as originally built would prove failures if measured by the standard of the present day. But neither the engine nor the pulverizer, simple though it be, have remained stationary. Every day has brought new experiences, and we can assure our readers that their teachings have not been disregarded. Gradually every part of the original machine has been altered, strengthened and changed in material as in build,



THE CYCLONE PULVERIZER.

periodical renewals. The loose chilled iron linings, covering the inside of the chamber, may at long intervals require to be replaced when very hard substances are being ground, but on soft or even medium hard materials the wear on these parts is nominal. The substances to be ground must, if solid, be crushed to about one inch cube before being fed into the pulverizer by the automatic bucket-tumbler feed, which can be adjusted so as to feed with greatest regularity any quantity required. As the crushed material is dropped from this feed into the chamber it is caught by the air currents created by the fans, one piece strikes the other, or occasionally the fan blades and walls of the chamber. The reduction is instantaneous and complete, and the ground material rises as a cloud of dust on the agitated air column above the fans.

To recover this dust, the flow of air is regulated by means of an exhaust fan. For some purposes the upper part of the mill connects with a long and narrow chamber, at the far end of which is placed the fan. In traveling through the chamber, the coarser particles are settled quicker than the finer ones. At the bottom of this chamber a double line of screw conveyors

more advantageous to replace the long settling chamber, with its conveyors, by an inclined, slowly revolving sheet iron reel, in which the powder that escapes from the mill is, so to speak, filtered through the air current passing the reel and fan, and what is fine enough to float on the air is deposited in the cloth room, as described above. The choice of screening apparatus depends on the nature and required fineness of the material to be ground.

The mills are made in two sizes—No. 1, fifteen inches diameter of fans, 3,100 revolutions, fifteen horse-power; No. 2, twenty-four inches diameter of fans, 2,200 revolutions, thirty five horse-power. The capacity will naturally vary with the substance ground and the fineness of reduction. The No. 2 mill will grind per hour forty bushels of wheat, hull and all, sixty bushels of corn, 3,000 pounds of soapstone to 200 mesh, 1,200 pounds of fibrous talc to 200 mesh, 2,000 pounds of asbestos to fibre, 800 pounds of slag to 225 mesh paint stock, 3,000 pounds of phosphate rock to 100 mesh, 5,000 pounds of clay to 100 mesh, 3,000 pounds of bone to twenty mesh, 2,000 pounds marble to 120 mesh, 250 pounds of mica to sixty mesh, 6,000 pounds of cement to eighty mesh.

and additional patents have been taken on the several improvements. To day nothing put the bed-plate and the patented principle remain of the original machine, and we introduce a machine excessively strong and durable, of amplest proportion, easily taken apart and put together, with every part made of the material best adapted and proven by experience, sometimes dearly bought, to give the best service; a machine which can be started on Monday morning and run continuously night and day until Saturday evening without break or hitch; a machine which with greatest regularity will produce just the grade of grinding wanted, always the same, and always in equal amounts, and yet which by a slight adjustment made while running can be made to grind finer or coarser as may be desired.

THE July report of President Hood, of the Western Maryland, shows that the prosperity of that road is continuing, and gratifying increases in both gross and net receipts are shown. The freight traffic over its new Potomac Valley branch is especially satisfactory, and it is hoped to soon have the passenger service in operation over this branch.

IRON MARKETS.

Philadelphia.

[From our own Correspondent.]

PHILADELPHIA, August 31.

The iron market continues to show a more satisfactory condition of things, and producers consider the prospects of better trade and more remunerative prices particularly bright. Buyers, who have during the uninterrupted decline in prices since the beginning of the year restricted their purchases of pig iron to actual needs, are now taking hold more freely, and the number of inquiries indicate greater confidence in the future. There still continues to be a cautiousness displayed in placing orders for any large amounts, but it is equally true that the producers of leading and well-known brands of pig metal are not disposed to consider any long-time contracts at present prices. Notwithstanding that sales continue principally for small lots, the aggregate consumption is heavy, and with stocks in consumers' yards light and with production reduced to a point more nearly equaling the output, conditions are favorable for a larger demand during the closing months of the year. Most of the idle rolling mills and steel works have resumed operations, and the present activity in this branch of trade is regarded as the commencement of a brisk fall trade. Crude iron has in a measure begun to reflect the briskness in the demand for finished products and the generally improved condition of business throughout the country. Even under the close competition of Southern pig iron the Eastern furnaces are adhering firmly to quotations and are making no concessions to secure business. On the whole, the present situation is one in which the manufacturers find much that is encouraging, and in consequence they regard the coming two or three months as likely to be more prosperous than at any previous period this year. Quotations are unchanged, although firmer, and restricted more to present deliveries.

Standard Pa. No. 1 X	.....\$15 00@15 50
" " No. 2 X	.....14 00@14 50
" " Forge	.....13 00@13 50
Southern Coke, No. 1 foundry	.....14 25@15 00
" " No. 2	.....13 50@14 00
" " Gray Forge	.....12 50@13 25

Pittsburg.

[From our own Correspondent.]

PITTSBURG, August 31.

The approach of fall has not made a mark on the iron market, but with a resumption of work in the local mills generally, the improvement must be close at hand. However, it will not be anything like what the furnacemen and dealers say it should be. The early fall does not hold out any prospects, and the late season is not to be depended upon for demands in iron, as the weather cuts in largely on operations requiring the use of iron. In particular this is true of the railroads, and so far as anyone can see the dead conditions are to keep right on. At the best there are no expectations, a state about as gloomy as at any time since the rapid decline started in.

Without specifying details it may be said that there is nothing doing in pig iron. The slight demand made by a partial resumption in some of the manufactories is not noticed, because these sales were made during the summer, and most of them had some little working stock on hand. This will continue for some little time, but is bound to be replaced by a better condition before long. The present demand is chiefly for foundry and forge irons in small lots and has no effect on the general market. Reports are still thick that Bessemer is selling away below \$14.00, and furnacemen just as promptly say that "there is no such thing." However, Bessemer is probably no worse off than some other lines, but is perhaps watched a little more closely. Gray forge is also kept strictly under the weather eye

for a possible tumble, but the chances are that it will regain its former position rather than go the other way. The quotations of last week hold good.

Gray Forge	.....\$12 50@12 75
Mill Iron	.....12 50@12 75
Foundry No. 1	.....14 30@14 60
" " No. 2	.....13 30@13 60
Bessemer	.....14 00@

It must be added that sales of small amounts of Bessemer are reported at terms as low as \$13.00 to \$13.90.

Wheeling.

[From our own Correspondent.]

WHEELING, W. VA., August 31.

The local iron and steel market still show very perceptibly the good effects of the shut down which was enforced by the labor trouble during July and the first half of August. More iron and steel has been sold, and the general tendency is now better than it has been at any time during the past year. Mill irons are in strong demand, and though the Southern makers have had to cut prices to a lower figure than was ever known before to get the business, they have been successful, and nearly all the iron sold in this market for more than a week has been of that variety. It is stated that Southern mill iron has been sold as low as \$12.25, although that is below the current figure, and it is doubtful if ordinary every-day buyers can cover their needs at that price.

Bessemer is still very low, but in better demand than a few weeks ago. It is not likely that any advance will be secured on that line for awhile, as nearly all the soft steel plants have taken business at or below \$23.50 for delivery as late as the middle of December.

Foundry iron is selling fairly well, with but little change in quotation. One delivery of 125 tons has been made since the last report at \$14.00, and a better price probably could not be secured at this time. Thirteen dollars is still asked for valley forge iron, but it is not selling well at that figure, for Southern iron, up to the standard quality, which produces just as good a finished article, can be had for half a dollar less on the ton. One sale of valley iron was made this week at \$12.80, but it is doubtful if the purchaser could find use for another lot at the same figure.

Several parties are now figuring on a big block of iron of mixed quality that is to be delivered here within the next month, but it will not be known before next Saturday or Monday who will get the contract.

Prices are quoted as follows:

No. 1 Southern Mill	.....\$12 35@12 50
No. 1 Northern Mill	.....12 75@13 00
No. 1 Foundry	.....14 75@15 00
No. 2 Foundry	.....13 75@14 00
No. 3 Foundry	.....13 25@13 50
Bessemer	.....13 85@14 15

Chicago.

CHICAGO, August 27.

This district is showing about the usual amount of business for this season of the year. Small orders up to one or two hundred tons are numerous, there always being a considerable trade going for small lots of this sort from consumers who confine their purchases to nearby requirements. Metal being sold is almost exclusively Northern and Southern coke. Prices remain practically unchanged; here and there furnaces are found with accumulations of stocks willing to make even slight further concessions in order to effect quick shipment. One of the features of interest in the situation is the fact that many furnaces are being put out of blast for the purpose of repairs and otherwise. This is gradually cutting down production; the effect must be felt later in the season. Consumption is going forward at a healthy rate; indications for the autumn trade are all good.

There is little of any kind doing in Lake Superior charcoals. Large consumers purchased earlier in the season, and those who have not provided for their entire season's requirements have enough contracted for to last through the present year, and feel dis-

posed to take their chances on the remainder on any stiffening on this class of metal.

We quote for cash f. o. b. cars Chicago:

Southern Coke No. 1 foundry	.....\$14 50@15 00
" " No. 2 foundry	.....13 50@14 00
" " No. 1 soft	.....13 50@14 00
" " No. 2 soft	.....13 00@13 50
Ohio silveries No. 1	.....17 00@17 50
" " No. 2	.....16 00@16 50
" " strong softeners No. 1	.....16 50@17 00
" " No. 2	.....15 50@16 00
Lake Superior charcoals, Nos. 1 to 6	.....16 50@17 50
Tennessee charcoals, No. 1	.....16 50@17 50
Standard Alabama car-wheel	.....20 00@22 00

ROGERS, BROWN & MERWIN.

Cincinnati.

CINCINNATI, August 27.

The week has been marked by large transactions in pig iron, but not large enough to pull the market out of the extreme depths in which it has been floundering for months past. In spots the activity has been so marked as to lead to bright hopes of an early improvement. In other spots the dullness and weakness have been more pronounced than ever. The situation as a whole, therefore, is a good deal mixed. Very careful observers are undecided whether to look for further increase of activity and improvement in values, or a continuation of the present dead level until the presidential year is past.

One very encouraging feature is the more active inquiry for finished forms of iron and steel. This is marked and widely extended. Will it continue? Another fact not to be overlooked is that every week cuts down the production of pig iron, which is already running below actual current consumption, according to best authorities. There are enough wholesome and healthy factors in the situation to give the market vigorous life, if it were not for the heavy accumulated stocks at certain points and the long education of sellers as well as buyers to the belief that values must continue going down because they have been going down steadily for two years.

There have been no special phases to the week's transactions. Rolling mills have bought more freely, stove works and pipe works have shown a little more interest, and the general jobbing foundries have taken hold more liberally.

We quote for cash f. o. b. cars Cincinnati:

Southern coke No. 1 foundry	.....\$13 25@13 75
Southern coke No. 2 foundry	.....12 25@12 75
" " No. 1 soft	.....12 25@12 75
Hanging Rock coke No. 1	.....15 50@16 00
Hanging Rock charcoal No. 1	.....19 00@20 00
Tennessee charcoal No. 1	.....16 00@16 50
Jackson Co. stone coal No. 1	.....16 00@16 50
Southern coke, gray forge	.....11 25@11 75
Southern coke, mottled	.....10 75@11 50
Standard Alabama C. W.	.....18 00@19 00
Tennessee C. W.	.....17 00@17 50
Lake Superior C. W.	.....17 50@18 00

ROGERS, BROWN & CO.

St. Louis.

ST. LOUIS, August 27.

There has been very little, if any, improvement during the past week. Most of the sales have been carload lots, with one or two 500 ton orders. We hear that several of the Southern furnaces will close down soon, and we are in hopes that this will have the effect of bolstering up prices and stop the decline that has been going on for the past three months.

We quote for cash f. o. b. cars St. Louis:

Southern Coke No. 1	.....\$13 75@14 25
" " No. 2	.....12 75@13 25
" " No. 3	.....12 50@12 75
" " Gray Forge	.....11 75@12 00
" " Charcoal No. 1	.....15 50@16 00
" " No. 2	.....15 00@15 50
Missouri Charcoal No. 1	.....14 50@15 00
" " No. 2	.....14 00@14 50
Ohio Softeners	.....16 50@17 00
Lake Superior Car Wheel	.....17 75@18 25
Southern	.....18 25@19 75
Frick's Connellsville Foundry Coke	.....5 65

ROGERS, BROWN & MEACHAM.

Buffalo.

BUFFALO, August 27.

There are no very well defined indications of a change in the market. The impression is gradually stealing over those who are studying the situation most carefully, however, that an increasing business in pig iron is before us, and in the near future. Taking this with the present re-

duced production, a sharp advance would unquestionably follow.

Stocks in consumers' yards being exceedingly light, the conditions are such as to result in a very quick change were one to come and with rapidly advancing prices.

We quote on the cash basis f. o. b. cars Buffalo:

No. 1 X Fdy., Strong, Coke Iron, Lake Superior ore	.....\$15 25
No. 2 X Fdy., Strong, Coke Iron, Lake Superior ore	.....14 25
Ohio Strong Softener No. 1	.....15 25
Jackson County Silvery No. 1	.....17 30
Lake Superior Charcoal	.....16 50
Tennessee Charcoal	.....17 00
Southern Soft No. 1	.....14 15
Alabama Car Wheel	.....19 00
Hanging Rock Charcoal	.....20 50

ROGERS, BROWN & CO.

Louisville.

LOUISVILLE, August 27.

Prices have continued firm, basis \$8.25 furnace for gray forge, but sales have not been large, and what buyers were on the market have paid this price. Sales for Eastern account have been more numerous than for some time, but it is thought that the demand was largely owing to the forced shutting down of many of the rolling mills there, which are now starting up and have bought for their present needs. Contracts recently made by pipe manufacturers have been on a low basis that necessitates their purchasing gray forge at the present market in order to be protected. There seems but little prospect of any special advance for some time, though fall trade will increase the demand for iron to a greater extent than has prevailed for the last month or two.

We quote for cash f. o. b. cars Louisville:

Southern Coke, No. 1 Foundry	.....\$13 25@13 75
" " No. 2	.....12 25@12 75
" " No. 3	.....11 50@11 75
" " Gray Forge	.....10 75@11 25
" " Charcoal, No. 1 Foundry	.....15 00@16 00
" " Car Wheel	.....17 50@19 00

GEO. H. HULL & CO.

Southern Iron Notes.

THE Roanoke (Va.) Iron Co. writes that no definite arrangements have as yet been made for putting its West End rolling mill in operation.

It is reported that a bed of iron ore, claimed to be equal in quantity and superior in quality to the Cranberry ores, is being developed near Blowing Rock, N. C.

THE Radford (Va.) Pipe Co. has received an order from Syracuse, N. Y., for 5,000 tons of 30-inch pipe.

THE Crescent Works of the Whitaker Iron Co., at Wheeling, W. Va., have ceased operations in order to make general repairs that will take about two weeks.

CHAIRMAN WALKER, on behalf of the commissioners of the Western Traffic Association, has handed down a decision in regard to the proposed revision of the rates and divisions on pig and manufactured iron from the Birmingham and Chattanooga district to Colorado and Utah points. These rates were made on a special basis, owing to competition through Memphis via Fort Worth, but this no longer exists, and lines west of St. Louis have to accept an unreasonably small proportion of the through rate. The commissioner rules that it will not be expedient to make a change at present.

THE Southern Pacific is preparing to handle a heavy rice crop along its Louisiana division. General Manager Kruttschnitt, of that road, states that the crop this year is the finest ever raised. He expects to see great results from rice culture in Texas, which is now in its incipency.

THE executive committee of the Florida Fruit Exchange have advised all growers to hold their oranges at \$1.50 per box on the tree for the coming season. They state that the fruit crop through the country is much below standard, and while Sicily has a large crop, there is generally a tendency to hold it back until the Florida crop is in.

LUMBER MARKETS.

New York.

OFFICE OF MANUFACTURERS' RECORD,
No. 126 Liberty Street,
NEW YORK, August 31.

We think the most important fact which concerns the lumber dealers of the South to-day is one which we have mentioned before, and which we now come to emphasize again. We refer to the scarcity of white pine. All our advices go to show that this scarcity is pronounced, that stocks everywhere are very light, and that the large wholesale concerns of the country are falling over each other looking for new supplies. The prices all through the West have either advanced or shown signs of advancing, and we believe that there is no question but that white pine lumber will be from three dollars to five dollars higher than it was last year, not very plenty at that. This condition should not be allowed to pass unnoticed by our Southern friends, and they should profit by the situation.

There is absolutely nothing to say about yellow pine. It is in a depressed condition, and while the demand has increased to some extent, prices remain as before stated.

Building orders, 12 in. and under... \$19 50@20 00
14 in. and up... 20 00@21 00
Yard orders, random... 17 00@18 00
Ship stock, 4 ft. average... 22 00@23 00
Heart face siding, 1 and 1 1/2 in... 18 00@19 00
1 inch wide boards... 22 00@23 00
1/2 and 3/4 inch wide boards... 23 00@24 00
Kiln-dried sap swing... 15 00@16 00
Rift-sawn flooring, rough cargo lot 3/4 tongue and grooved, in carload lots... 40 00@41 00

North Carolina pine and cypress are holding their own, and we hear of a considerable demand for both these woods.

There is an improved condition in the hardwood market, and we think the next few weeks will show an improved trade, and should New York escape the cholera scare we would not be surprised to see a better business than we have had for the past two or three years.

There is a good demand for first-class walnut. There is none in the market, and while the call for it is not extremely heavy, yet almost all of our dealers generally carry more stock than they are carrying at present.

There is no better wood in the market to-day that we know of than cherry. Holders need have no anxiety concerning it. We would as soon have a good stock of cherry as a good 6 per cent. bond, because it is bound to be higher, we believe.

The inquiry for quartered oak is improving for all grades except rejects and culls. We think our readers may confidently look for a very much improved condition in this stock before a great while.

There is very little call for common and none to speak of for culls. Plain oak is also slow of sale.

18 inch and up... \$35 00@36 00
14, 16 and 18 inch and up... 36 00@37 00
2 inch... 37 00@38 00
Export oak... 32 00@33 00

While we do not change our quotations on plain oak, yet prices have gone off a little bit.

Ash continues in demand. Good stock sells readily.

3/4, 1/2 and 2 inch... \$35 00@36 00
2 1/2, 3 and 4 inch... 38 00@40 00
Common... 22 00@24 00
Balusters... 22 00@24 00

We do not discover any advance in prices for poplar, notwithstanding our advice about white pine. It is selling much lower than it should sell, and we confidently hope that something will occur to put the value somewhere near where it should be. There is going to be a good call for saps and common poplar, and we already hear of several large orders floating about.

Elm is growing in popularity. This is another wood which is selling greatly below its value, and it seems positively wicked that this should be permitted, in

view of the fact that our forests are being so rapidly depleted. It makes a true lumberman sad to think how little is thought of the future by the manufacturing lumbermen. Their idea seems to be "get all we can out of to-day and let to-morrow rip." If they could but be induced to go a little slow, to cut off their good stock and cultivate the small, they would have a large return at some future day. If there is anything that we can say to make the lumbermen take this lesson to heart let us say it boldly.

Baltimore.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, September 1.

A firmer tone throughout the local lumber and timber market during the week has prevailed, and the volume of business somewhat improved. The feeling among operators is better, and receipts are not so liberal, while the supply at the moment is ample for the fair demand. In Virginia and North Carolina pine values are steady, and the inquiry very free for certain sizes and dimensions. There is a good demand for air-dried lumber, and the receipts for the week rather light. Box manufacturers are well supplied with orders and are all fully employed. There is also a fair activity among planing mills, and stocks are moderate on account of the free delivery and promptness with which orders are filled. In cypress the demand is fair, and all choice grades are firm at outside figures. White pine is unchanged, and, with a moderate volume of trade and fair demand, prices rule steady to firm in tone. Hardwoods show but little change from a week ago, and the demand is limited in character and regular, with prices firm for desirable woods of certain dimensions. The shingle trade is good, and supply about equal to the demand, while both saps and hearts are firm. The foreign exports for the month of August were 1,714,000 feet of lumber and 1,497 logs. Laths are quiet and steady. The following table represents the prices current at this date:

VIRGINIA AND NORTH CAROLINA PINE.
5-4x10 and 12 No. 2, kiln dried... \$16 50@17 75
4-4x10 and 12 No. 1... 19 50@20 00
4-4 narrow edge, No. 1, kiln dried... 16 75@17 25
4-4 wide... 18 00@19 00
6-4x8-10 and 12, No. 1, kiln dried... 22 00@22 50
4-4 No. 1 edge flooring, air dried... 15 00@15 50
4-4 No. 2 edge flooring... 12 50@13 00
4-4 No. 1 12-inch stock... 16 50@17 75
4-4 No. 2 12-inch stock... 13 75@14 25
4-4 edge box or rough wide... 9 75@10 25
4-4 edge box or rough (ordinary widths)... 8 00@9 00
4-4 edge box or rough (narrow)... 8 25@8 75
4-4x12 edge box or rough... 10 00@10 50
3/4 narrow edge... 7 00@8 00
3/4 all widths... 8 00@9 00
1/2, 10x16 wide... 9 00@10 00
Small joists, 2 1/2-12, 14 and 16 long... 8 50@9 50
Large joists, 3-16 long and up... 9 00@10 00
Scantling, 2x3-16... 9 00@9 50
2x4-16, 18 and 20... 9 00@9 50
3x4-16, 18 and 20... 9 00@9 50
6-4x12-16... 10 00@10 50
8-4x12-16... 10 00@10 50
8-4x10-16... 9 00@9 50
8-4x10-16... 9 00@9 50

SOUTHERN PINE.
Siding and edge boards... \$14 00@14 75
Heart face boards... 22 00@23 00

WHITE PINE.
1st and 2d clear, 4-4... \$48 50@51 50
3d clear, 4-4, 5-4, 6-4 and 8-4... 43 00@44 00
Good edge culls... 14 50@15 50
Good stock... 16 00@17 00

White pine, No. 1, 4-foot headed pickets... 13 50@14 50
4-4 selected edge... 39 00@43 50
6-4 selected edge, box out... 39 00@46 00

CYPRESS.
4-4x6, 16 feet, clear... \$22 00@23 00
4-4x6, 16 feet, fencing... 12 00@13 00
4-4 rough edge... 9 00@9 50
4-4 edge, Nos. 1 and 2... 18 00@21 00

HARDWOODS.
Walnut.
3/4, Nos. 1 and 2... \$75 00@100 00
4-4, Nos. 1 and 2... 90 00@100 00
5-4, 6-4 and 8-4... 95 00@110 00
Nos. 2 1/2, 3 and 4... 125 00@130 00
Newell stuff, clear of heart... 125 00@130 00
Culls... 30 00@35 00

Oak.
Cabinet, white and red, plain sawed and good 1 and 2, 8 in. and up, 12 to 16 feet long, 4-4... \$35 00@40 00
5-4 to 8-4... 35 00@40 00
Quartered white, 1 and 2 quality, all figured, 6 in. and up wide, 4-4... 50 00@52 50
Culls... 10 00@15 00

Poplar.
Nos. 1 and 2, 3/4... \$21 00@23 00
4-4... 24 00@26 00
Nos. 5, 6 and 8-4... 27 00@30 00
In yellow pine cargoes, log run stock... 12 00@16 00
Culls... 12 00@14 00

SHINGLES.
Cypress, No. 1 hearts, sawed, 6x20... \$7 71@8 00
No. 1 saps, sawed, 6x20... 5 75@6 75
No. 1 hearts, shaved, 6x20... 6 75@7 00
No. 1 saps, shaved, 6x20... 5 25@5 50

LATHS.
White pine... \$2 75@2 80
Spruce... 2 45@2 50
Cypress... 2 10@2 15

Norfolk.

[From our own Correspondent.]
NORFOLK, VA., August 30.

In reporting this lumber market it is safe to say that the present activity at this period of the season is decidedly unusual, and the general features of the lumber and timber trade have entirely changed during the current year. The advance of this industry in previous years has been regular, but the sudden increase in capacity of plants and spirited demand throughout the saw mill section of Virginia is worthy of note. During the past week everything has been full of life in lumber circles, and orders are rushing in as usual, so that in many cases mills will run day and night for the balance of this year. Virginia and North Carolina pine seems to have the call, and as fast as it leaves the kilns it is at once shipped. Prices throughout the general list remain unchanged, but are firmer than last week. There is a better demand for air-dried lumber, the inquiry being mostly for No. 1 and 2. There is a good demand for cypress, and stocks are generally much reduced, causing a firmer tone for values. Cypress shingles are also in good request, and the demand in most cases greater than the supply.

Kiln-dried North Carolina pine lumber f. o. b. at this port is quoted as follows:

5-4 lift No. 1... \$27 50@
5-4 lift No. 2... 16 00@
5-4x10 No. 1... 19 00@
5-4x12 No. 1... 19 50@
5-4x10 No. 2... 15 00@
5-4x12 No. 2... 15 50@
5-4 edge No. 1... 17 00@
5-4 edge No. 2... 13 50@
4-4 lift No. 1... 25 00@
4-4 lift No. 2... 15 00@
4-4x10 No. 1... 18 00@
4-4x12 No. 1... 18 00@
4-4x10 No. 2... 14 00@
4-4x12 No. 2... 15 00@
4-4 edge No. 3... 9 50@
4-4 edge No. 3... 10 50@
4-4x6, 10 and 12 culls or box... 8 50@10 00
4-4x5-4 edge, culls or box... 8 00@8 50

VIRGINIA PINE.
4-4 flooring boards (dry and clear)... \$13 50@14 50
4-4 flooring boards (rough)... 7 75@8 75

SHINGLES.
No. 1 hearts, split, car lots... \$6 75@7 25
No. 2 hearts, split, car lots... 5 50@6 25
No. 1 saps, split, car lots... 4 75@5 50
No. 2 saps, split, car lots... 4 00@4 75
No. 1 sawed hearts, car lots... 6 50@7 00
No. 2 sawed hearts, car lots... 5 00@5 50

WOOD.
Hard, per cord... \$2 75@3 00
Pine, per cord... 2 75@3 00

STAVES.
Red oak hogshead, prime... \$35 00@37 00
Red oak hogshead, culls... 22 00@23 00
White oak hogshead, prime... 55 00@57 00
White oak hogshead, culls... 30 00@35 00
White oak heading, prime... 55 00@56 00
White oak heading, culls... 25 00@29 00

Savannah.

[From our own Correspondent.]
SAVANNAH, GA., August 30.

There is a fairly active demand throughout the lumber and timber market at this port, both foreign and domestic. The continuous rains of the last few weeks have restricted operations in the milling section, and numerous orders are now coming, so that there is quite a rush of business under a clear temperature, which will facilitate operations. The market is very steady, and the demand during the week has been fair, with the prospects very encouraging for a good fall and winter trade. The exports for the week were 3,260,780 superficial feet of lumber and 460,000 shingles. In the list of values no material change has occurred. First and second dry-kiln boards are quoted at \$11.00 to \$14.00 per thousand, as to size; standards \$9.00 to \$12.00, and flooring \$8.00 to \$12.00. In timber freights there is very little doing, and the offering of tonnage is quite liberal. Rates from this and nearby Georgia ports for sailers are quoted at \$4.25 to \$5.00 for a range including Baltimore and Portland, Me. Steamers are quoted at \$7.00 to New York, Philadelphia and Boston \$8.00, and Baltimore \$6.50.

Charleston.

[From our own Correspondent.]
CHARLESTON, S. C., August 30.

The tone of trade in lumber and timber

circles the past week has been quiet, and the volume of business about at a minimum. There is, however, a good demand from Eastern ports, the shipments amounting to about 750,000 feet of lumber for the week. Throughout the milling section there is considerable doing, while orders are generally plenty and prices a shade better. All well manufactured stock of desirable dimensions commands fair figures, and prices are steady to firm for such stock. The foreign trade is dull, with very little demand at the moment for timber either hewn or sawn. The quotations range as follows: For merchantable lumber \$14.00 to \$16.00 for city sawed, and \$12.00 to \$14.00 for railroad. Square and round timber is held at \$9.00 to \$13.00 for railroad, and \$8.00 to \$11.00 for raft; dock timber, \$4.50 to \$6.50, and shipping \$5.50 to \$10.50. There is a good demand for shingles, with stocks light and values unchanged at \$5.00 to \$7.00 per thousand.

EXPORTS OF LUMBER FROM CHARLESTON FROM SEPTEMBER 1, 1891, TO AUGUST 26, 1892.

Exported to	1891-'92 Feet.	1890-'91 Feet.
New York.....	31,345,147	23,941,951
Boston.....	25,000	25,000
Philadelphia.....	7,592,000	5,521,000
Baltimore.....	2,856,778	2,290,900
Other United States ports	4,618,009	7,583,311
Total coastwise.....	46,414,134	39,558,222
Great Britain.....		
Palermo.....		
France.....		
West Indies.....	2,177,300	5,123,155
South America.....	177,000	540,410
Nova Scotia.....	578,174	
Other foreign ports.....		
Total foreign.....	2,932,474	5,669,605
Grand total.....	49,346,608	45,227,827

Mobile.

[From our own Correspondent.]
MOBILE, ALA., August 30.

The general features of the lumber and timber market during the past week have been rather encouraging, and the dullness incidental to the close of the business year has been broken by a fairly active business. The timber market, however, is quiet, with stocks considerably depleted, hewn timber being quoted at 11 1/2 cents to 12 1/2 cents per cubic foot, and sawn timber is held at 10 to 11 cents, with prospects for a better trade in the near future. Contract deliveries are being made to South American and Mexican ports of lumber and crossies for railroad and dock building, and a constant and lucrative trade is being established with these points. At points of production there is a good supply of logs already cut well adapted for crossies, and prices range from \$9.50 to \$10.00 per thousand. Some large orders have been received at the various mills in the interior, and the business of the year has been most satisfactory to millmen and timber getters. Cypress lumber and shingles are in good demand, and prices very steady at current figures. The Seaboard Manufacturing Co. made a large shipment of cypress lumber and shingles to Boston, Mass., consisting of 537,000 feet and 56,000 shingles. A good inquiry and demand is being established with Eastern ports for this wood, and with cypress lumber properly graded the highest figures can be obtained under a strong competition with other points. Active operations are now in progress, and the new year brings with it a market in good shape and prices steady and firm. Many improvements are going on throughout the milling section. The various plants are being enlarged in some cases and burnt districts rebuilt. Hubbard Bros. have commenced running again, having made a number of improvements and repairs to their mill. Hieronymus Bros. are also adding to and improving their extensive plant. Turner & Oates' saw mill was destroyed by fire last week. The exports of lumber for the past week, both coastwise and foreign, amounted to 1,147,637 feet. Hewn timber exported aggre-

gated 37,783 cubic feet, and sawn timber 137,677 cubic feet. At Pensacola the market is very active and the volume of business larger than usual, the exports for the week ending the 25th inst. being 10,424,000 superficial feet of lumber and timber and 11,056 cubic feet of hewn timber to foreign ports. The shipments coastwise were 469,000 feet of timber and lumber valued at \$7,620. Trade with South America is increasing, and during the week a large cargo of lumber and timber valued at \$6,060 was cleared for Buenos Ayres.

Memphis.

[From our own Correspondent.]

MEMPHIS, TENN., August 30.

There has been a sort of quietness in the lumber trade during the past week. While it has been about equal in volume to the usual trade of the season, it has not been as prosperous as during the few weeks preceding. The local trade has fallen off quite perceptibly, but the shipping has nearly kept up.

There is just now a better stock of dry lumber to be found, not in the yards here, but for sale by those having offices in the city. L. V. Boyle & Co. have at their mill in Trimble, Tenn., 2,000,000 feet of oak, white and red, plain and quartered, "bone dry," and at their mill at Cleveland, Miss., about 1,000,000 of the same sort of lumber. Darnell & Son have on hand now for delivery fully 5,000,000 feet of thoroughly dry stock, oak, ash and cypress—oak, plain and quartered, white and red, and of all marketable sizes. Thus this market is for the present well supplied with dry stock in all except poplar, and of that there is none to speak of.

The Memphis Lumber & Manufacturing Co. has just been filling an order for first and second poplar to Erie, Pa. The recent reductions in freight rates to Texas points and to Boston, etc., by way of the Louisville & Nashville, have been met by other roads, and now we are having a very fair set of rates, and the business will feel it, this Erie (Pa.) shipment being one of the first.

The Interstate Fair Park and some other local enterprises are giving some good contracts, so far as amount is concerned, to our local dealers, but the prices are very badly cut and the profits too low for continuance.

There is no change to indicate in prices, which generally show increasing firmness:

BLACK WALNUT.	
1st and 2d, 1 1/2 and 2 inch.	\$5 00 @ 70 00
Common.	35 50 @ 40 00
Counter tops.	50 00 @ 110 00
ASH.	
1st and 2d clear, 1 to 4 inch.	24 00 @ 30 00
Common.	12 00 @ 14 00
CYPRESS.	
1-inch, 1st and 2d clear.	22 00 @ 24 00
1 1/2, 1 3/4 and 2 inch.	24 00 @ 26 00
Fencing 1x6, 16 feet.	15 00 @ 16 00
POPLAR.	
1 inch, 1st and 2d clear.	24 00 @ 25 00
1 1/2 and 2-inch 1st and 2d clear.	26 00 @ 28 00
Common boards.	14 00 @ 16 00
Dressed, 1 1/2 & 2-in., 1st and 2d clear.	25 00 @ 30 00
Common dressed, 1-inch.	16 00 @ 17 50
Squares.	22 50 @ 26 00
COTTONWOOD.	
1 to 3 inch mill run, culls out.	9 00 @ 12 00
Squares.	12 50 @ 16 00
RED GUM.	
1st and 2d.	16 00 @ 20 00
Common and culls.	8 00 @ 10 00
OAK.	
1 to 4 inch, 1st and 2d.	24 00 @ 26 00
Common, 1 and 2 inch.	13 00 @ 15 00
Quarter oak, 1 inch, 1st and 2d.	30 00 @ 32 00
Quarter oak, 1 1/2-inch and up.	34 00 @ 36 00
White \$1 higher.	
YELLOW PINE.	
1st and 2d, 1 1/2 and 2 inch.	18 00 @ 20 00
Dressed.	25 00 @ 30 00
Flooring, 3 and 4 d and m.	17 50 @
Flooring, 3 and 4 d and m.	17 50 @ 20 00
2d flooring.	15 00 @ 17 50
Hea 1 step lumber.	27 50 @
Ceiling, 1st and 2d, 3/4, 1/2 and 1/4.	17 50 @ 20 00
Ceiling, 1st and 2d, 3/4 and 1/2.	16 00 @
Common l. o. b. Memphis.	
Car lots.	12 50 @
TIMBER (LOGS).	
Poplar.	6 00 @ 10 00
Cypress.	6 00 @ 9 00
Cottonwood.	3 00 @ 4 00
Gum.	3 00 @ 4 50
Oak.	6 00 @ 12 00
Ash.	8 00 @ 13 00
Black walnut.	15 00 @ 50 00
SHINGLES.	
No. 1 heart cypress, 16 inch.	3 00 @
No. 1 sap, 16 inch.	2 25 @
LATH.	
Poplar.	2 00 @ 2 75
Cypress.	2 00 @
Pine.	2 00 @

Beaumont, Texas.

BEAUMONT, TEXAS, August 29.

After a period of political excitement lumbermen throughout the milling section have settled down to business, and there has been a better volume of trade during the week, the demand being principally from points beyond the State. The whole market seems to have suddenly awakened, and a fair activity has characterized the transactions in most cases. The demand is mostly for material for finishing purposes, and stocks that have accumulated are now drawn upon to satisfy the wants of buyers. Orders are plenty, but dimension stocks are much reduced and broken with a scarcity of certain sizes and dimensions. The Beaumont Journal, in its review of the lumber market, says: "Fairly good trade in yard stocks has characterized the week, the large proportion of orders coming from other States, Texas not having sufficiently recovered from political excitement to settle down to hard business. There is a better demand for dressed stock than usual, indicative of a revival in building improvements. * * * Dimension stocks are very much broken, and prompt shipments of certain sizes and lengths are not guaranteed. Prices on all classes of lumber are stiff. The shingle situation has not changed, and the demand largely exceeds the supply." At Orange the mills are all fully engaged, while shipments are somewhat reduced on account of the low water at the trams on the Sabine river, navigation being suspended for the present unless a big rise should occur. The output from all sections, however, is good, and at Houston there is a great rush of lumber trains with material destined for the North and other points. Work is being rapidly pushed on the M., K. & T. extensions, and contractors for timber are making rapid deliveries as quick as the mills can turn it out. The betterments which will be made on roads during the remainder of the year will cause a good demand for timber, and with the present activity in dealers' supplies will create a firm market, with a corresponding remuneration to manufacturers.

COTTON MARKET.

NEW ORLEANS, LA., August 29.

Editor Manufacturers' Record:

The past week has not shown that gain in new receipts which might have been expected, and therefore there has been somewhat more disposition to improve in Liverpool, to which we sympathized on this side to some extent, but each improvement has been difficult to sustain, such advances bringing out long cotton. There is still a large, long interest in the market, and as there has been more disposition to buy than to sell, we have seen a gradually increasing amount of orders of that character which will be an element of weakness whenever receipts become sufficiently large to give sellers more confidence, with a corresponding weakening feeling among those who are now long. Our advice is that notices will be issued on Wednesday in New York, and with no new business coming to the market there as well as here, it will require more buying power than is now evident to sustain prices at their present level. Port receipts to-day are 4,004 against 14,007 last year, and we shall run behind the corresponding day of last season for several months anyhow, if not continually, but this apparently has no effect, so far as bringing any large or active buying into the market is concerned. We must next rely upon the possibility of unfavorable crop accounts, without which Liverpool will not be encouraged, and without encouragement there the position on this side will be a weak one.

To express an opinion is one thing, and on a question like cotton it is well to go into details a little to show upon what one bases one's impressions. The New

England mills, we know positively, are largely stocked, and we further know by the weekly statement that Liverpool and Havre have about 1,750,000 bales between them, so that there is no danger of either Continental or English spinners becoming alarmed over any such shortage in the American crop as is now anticipated. If trade is no better the coming season, and indications certainly do not point that way, then a crop of 7,500,000 bales for 1892-93 gives very little room to hope for any material improvement in values this season. On the other hand, we might have a very early frost, with an unfavorable picking season, trade might revive decidedly, and in February or March next the outlook for another crop might show that planting preparations indicated a very large reduction, in which events the winter or spring months might advance rapidly and materially. At present the world has too much cotton for the demand, and no improved condition of things can be brought about until the latter becomes greater than the supply, present or prospective. What is considered as reliable information that we and others are receiving from Texas indicates another very large crop in that State. That it will be as large as last year, as some of our correspondents believe, we cannot by any means bring ourselves to think. October closes to-day at 6.82, against 6.88 on the 22d instant.

ATWOOD VIOLETT & CO.

CLOSING PRICES OF FUTURES AUGUST 31.

Months.	New Orleans.	New York.	Liverpool.
August.....	6.80 @	6.83 @	3 56 64
September.....	6.80 @	6.83 @	3 56 64
October.....	6.80 @	6.83 @	3 56 64
November.....	6.80 @	6.83 @	3 56 64
December.....	6.80 @	6.83 @	3 56 64
January.....	6.80 @	6.83 @	3 56 64
February.....	6.80 @	6.83 @	3 56 64
March.....	6.80 @	6.83 @	3 56 64
April.....	6.80 @	6.83 @	3 56 64
May.....	6.80 @	6.83 @	3 56 64
June.....	6.80 @	6.83 @	3 56 64
July.....	6.80 @	6.83 @	3 56 64
Tone of the market.....	Easy.	Easy.	Easy.

CLOSING PRICES OF SPOT COTTON AUGUST 31.

Grade.	New Orleans.	New York.	Liverpool.
Middling.....	7 5/8	7 1/2	4 3/4
Low middling.....	6 5/8	6 11-16	3 3/4
Good ordinary.....	6	6	3 9-16
Tone of market.....	Easy.	Quiet.	Easy.

Southern Textile Notes.

THE Kilbourn Knitting Co., of New Brunswick, N. J., is enlarging its mill at Martinsburg, W. Va.

COL. W. D. KYLE intends to establish a knitting mill at Opelika, Ala. He has rented a brick building and purchased fifteen knitting machines which he will install as soon as received, and operations will soon be commenced.

ENDEAVORS are being made to organize a company for the erection of a cotton mill at Sylacauga, Ala. Subscriptions to the amount of \$23,000 have already been obtained.

THE Coosa Manufacturing Co., of Piedmont, Ala., intends building a cotton-bale warehouse addition to its mill. The building will be 50x58 feet in size and will hold 300 bales.

THE Opelika (Ala.) Knitting Co., manufacturers of seamless and ribbed hosiery, is now arranging to considerably increase the capacity of its knitting mill. This company is now employing 100 hands, and is officered by W. B. Shepard, president; B. F. Coleman, secretary and treasurer, and E. A. Brown, superintendent.

THE Thistle Mills, at Ilchester, Md., have shut down for general repairs. Operations will be resumed this week.

MESSRS. HUGHES & NEWBY, of Centre Point, Ark., will establish a woolen mill. The machinery for the plant has been pur-

chased, and the buildings in which to install same are now being erected.

REPORTS from various parts of Mississippi state that boll worms have appeared and are doing great damage to the cotton. They are not confined to any class of soil, but seem to be as bad in either prairie or sandy land.

THE Fulton Bag & Cotton Mills at Atlanta, Ga., have recently made considerable improvements in their bleachery, including additional machines from the Granger Foundry & Machine Co., of Providence, R. I. The output of the Fulton mills is light sheetings and bagging, and they are operating 12,672 (ring) spindles and 450 looms. Jacob Elsas is president of the company; Julius Dreyfus, secretary and treasurer, and J. R. Pearce, superintendent.

A MOVEMENT for the erection of a knitting mill is afoot in Roanoke, Va. At a meeting of the executive committee of the Board of Trade, held during the week, the subject was thoroughly discussed. Letters from mills in Suffolk and Norfolk were read showing cost of plants and cost of operating same, together with the percentage paid on the invested money. The secretary of the board will visit Norfolk in a few days to further investigate the matter.

THE semi-annual meeting of the Cannon Manufacturing Co., of Concord, N. C., manufacturers of brown sheeting, was held last week and a dividend of 4 per cent. declared. This mill is a very prosperous one, and since the first of the year has put in twenty five looms and 1,040 spindles at a cost of \$8589.87. Jas. M. Odell is president of the concern; J. W. Cannon, secretary and treasurer, and L. D. Daval, superintendent.

Niagara Falls in Early Autumn.

The third excursion to Niagara Falls via Royal Blue Line, over a new route, has been arranged for Thursday, September 8th. A special train with parlor cars will leave B. & O. Station, Washington, at 7:35 A. M., and Camden Station, Baltimore, at 8:45 A. M., passing through the scenic Wyoming and Lehigh valleys, the Pennsylvania coal fields, and arriving at Niagara Falls at midnight. No more favorable date for the excursion could be selected, as early autumn is the most pleasant season in the Northern lake region, and traveling is then most comfortable. Tickets will be good to stop off at Buffalo, the weird Glen Onoko, Maunch Chunk and Elmira, near Watkins' Glen, and as tickets have a 10-day limit, ample time will be afforded for side trips to the famous resorts in Southern Canada and Northern New York State. Round trip from Washington and Baltimore \$10.00. †

Reunion of Old Sailors and Soldiers.

Two coming important events of interest to sailors and soldiers of the late war will be the Reunion of the Naval Veterans at Baltimore, September 15th to 19th, and the Encampment of the Grand Army of the Republic at Washington, commencing September 20th, immediately after the Sailors' Reunion. Interest in the reunion will be heightened by the presence of the White Squadron in the harbor of Baltimore. The G. A. R. Encampment will be the occasion of the greatest military assemblage in Washington since the Grand Review of 1865, following the fall of Richmond. For both of these events the Baltimore & Ohio Railroad will sell tickets at greatly reduced rates. Tickets will be sold from September 13th to 20th, inclusive, valid for return journey until October 10th. During the Encampment at Washington the Baltimore & Ohio Railroad will run Excursions daily to Gettysburg. Harper's Ferry and the Virginia battlefield, to all of which points tickets will be sold at low rates. The Baltimore & Ohio is the familiar route to thousands of veterans who traveled over it early in the sixties as raw recruits to join the ranks.

For detailed information as to time of trains, rates and sleeping-car accommodations apply to A. J. Summrs, 211 Washington street, Boston; C. F. Craig, 415 Broadway, New York; James Potter, 533 Chestnut street, Philadelphia, or Charles O. Scull, General Passenger Agent, Baltimore, Md. †

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

† In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Birmingham—The Herndon Seamless Shoe Co. will hold a meeting on September 8 to consider increasing its capital stock to \$500,000.

Birmingham—Bicycle Works.—Mr. Loosely contemplates establishing bicycle works.

Bridgeport—Wire-nail Works.—T. T. Baxter, of West Dennis, Mass., intends to establish wire-nail works in Bridgeport.

Cedar Bluff—Wood Works.—Messrs. Chancellor & Monahan will establish bent wood works.

Cullman—Furniture Factory.—A. Dreher & Co. are rebuilding their furniture factory which was recently burned.

Huntsville—Broom Factory.—J. C. Steele and James Caldwell have established a broom factory.

Mobile—Oil Mill.—The Gulf City Oil Mills, which were burned recently, will be rebuilt. Site has been secured for the new buildings and work on them will soon commence. The plant will cost about \$100,000.

Opelika—Knitting Mill.—W. D. Kyle will start a knitting mill; machinery purchased.

ARKANSAS.

Arkansas City—Real Estate, etc.—The Whitehill Co. has been chartered to deal in real estate, etc. Its capital stock is \$50,000. J. M. Whitehill is president; David A. Gates, vice president, and Jesse E. Lacy, secretary and treasurer.

Centre Point—Woolen Mill.—Hughes & Newby will establish a woolen mill.

Little Rock—Cooperage Works, etc.—The Geyer-Adams Co. will rebuild its cooperage works and stave factory reported in this issue as burned.

Newport—Milling Company.—The Paragon Milling Co. has been chartered. N. B. Wishon is president, and L. and R. Hirsh and D. W. and A. G. Anderson are the directors; capital stock \$50,000.

Prairie View—Handle Factory.—Jansen & Walker have put new machinery in their handle factory.

FLORIDA.

Bartow—Wagon Works.—H. E. Padgett, of Chicora, has purchased an interest in T. M. Lybass's wagon works.

Bowling Green—Saw and Planing Mill, etc.—W. Z. Overbay has erected a new saw and planing mill, and put in special machinery for the manufacture of box heads.

Citra—Phosphate Plant.—The Ocala & Blue River Phosphate Co. is erecting a \$30,000 plant in Suwannee county. Outfit for the plant purchased from F. D. Crummer & Son, of Detroit, Mich.

Orlando—Foundry and Machine Works.—The South Florida Foundry & Machine Works has put in a new steam hammer.

Pensacola—Merchandise Company.—Heinberg Bros. have obtained charter; capital stock \$100,000.

GEORGIA.

Acworth—Grist Mill.—B. Rainey & Son will put in a grist mill.*

Atlanta—Ice Machinery Works.—The Burns Manufacturing Co., lately reported as to erect ice machinery works, has obtained a charter. The incorporators are James A. Burns, Edward P. Burns and James F. Burns, and the capital stock is \$10,000.

Brunswick—Real Estate.—Franklin Everhart, of New York; Horace Moody, of West Newbury, Mass.; Alfred J. Crovatt, and others have incor-

porated the South Brunswick Trading & Developing Co. to deal in real estate, etc. The capital stock is \$100,000.

Demorest—Spoke and Handle Factory.—The Demorest Spoke & Handle Co. has been chartered to manufacture handles and spokes.

Savannah—Land Company.—Lawrence Lippman, Charles S. Wood, Abram A. Solomon, Jr., and others have incorporated the Columbian Land Co. to deal in lands, etc.

KENTUCKY.

Ashland—Iron Furnace.—The Ashland Coal & Iron Co. has overhauled its furnace, built new boilers and erected smokestack.

Covington—Importing, Manufacturing, etc.—Robert Kaufmann, Thomas B. Wise and Thos. C. Borge have incorporated the Robert Kaufmann Co. to import, manufacture and sell cloaks, dry goods and notions. The capital stock is \$60,000.

Covington—Baking Powder Factory.—L. M. Hadden, Joseph H. Hunter and Justus H. Schaaf have incorporated the National Baking Powder Co. for the manufacture and sale of a special brand of baking powder. The company's capital stock is \$60,000.

Georgetown—Electric-light or Gas Plant.—An electric-light or gas plant is to be erected in Georgetown. The chairman of the board of trustees will receive bids for lighting the town either by gas or electricity until September 19. (See ad.)

Henderson—Gas Works.—R. C. Soaper, John O. Byrne, R. H. Cunningham, Jas. E. Rankin, A. S. Winstead, A. J. Worsham and A. B. Lights have incorporated the Henderson Fuel Gas Co. for the purpose of erecting fuel gas works. The capital stock named is \$200,000.

Maysville—Stove Foundry.—W. W. Ball is interested in a plan for the erection of a stove foundry in Maysville.

Middlesboro—Coal Mining.—M. J. Corbett, John F. Aumus, William Aumus and M. H. Rhorer have incorporated the Mingo Coal Co. for mining coal, etc. The capital stock is \$25,000.

Newport—F. R. Phillips, F. A. Griffin, Edward Purser and Hubbard Schwartz have incorporated the Newport & Suburban Express & Delivery Co.

LOUISIANA.

Lafayette—Sugar Refinery.—A movement is afoot for the erection of a central sugar refinery of 3,000,000 pounds capacity per annum. J. S. Mountain or G. A. Breau can give information.

Madisonville—Brick Works.—A stock company has been organized to establish, between Madisonville and Old Landing, brick works with a daily capacity of 50,000. A. Delavigne, of New Orleans, is interested.

Washington—Tile Works.—H. L. Bidstrup has established tile works with a capacity of 15,000 3 inch tiles daily.

MARYLAND.

Baltimore—Soap Factory.—The Atlas Soap Co., reported last week as incorporated, will manufacture soap.*

Baltimore—Corn Mill.—The Hudnutt Milling Co., of Terre Haute, Ind., has purchased Wm. Hopps & Co.'s mill, and will equip it with machinery for grinding corn. The capacity of the new plant is to be 800 barrels of hominy, grits, etc., daily.

Baltimore—John G. Holmes and William Harris, of Philadelphia, Pa., and L. D. Maier, Harry G. Ensor and Charles Wilms, of Baltimore, have incorporated the Charles Wilms Surgical Instrument Co. with a capital stock of \$40,000.

Cumberland—Iron and Shafting Works.—The Cumberland Iron & Steel Shafting Co., reported last week as chartered, has organized by electing as president Merwin McKaig; as vice-president, Walter J. Muncester, and as secretary, Albert Charles. Site for the works has not yet been selected.

Hagerstown—Bicycle Works.—The Surbridge Manufacturing Co., reported last week as incorporated, is now engaged in setting up a \$30,000 plant for the manufacture of bicycles. One hundred and fifty hands will be employed at the outset and increased to 200 during the busy season. R. G. Surbridge is president of the company.*

MISSISSIPPI.

Matagorda (no postoffice)—Saw Mill.—Messrs. Taylor & Russell have erected a saw mill.

Vicksburg—Furniture Factory.—A Detroit (Mich.) party may establish a furniture factory in Vicksburg. Messrs. Curphy & Oulette, who are endeavoring to induce him, can give information.

NORTH CAROLINA.

Faith—Oil Mill.—John Josey has commenced the manufacture of pennyroyal oil.

Iredell—Creamery.—The Iredell Creamery Co., recently organized, has established a creamery.

Mocksville—Flour Mill.—J. W. Etchison, of Cana, will remove his flour mill to Mocksville.

Raleigh—Phosphate Works.—The Caraleigh Phosphate Co. will at once rebuild the portion of its plant (the acid chambers) that was burned lately. Work has already commenced.

Shelby—Machine Shop.—Zoli Jackson has established a general repair shop.

SOUTH CAROLINA.

Florence—Flour Mill.—A. A. Cohen has purchased the Lewis mill property and intends to convert it into a flour mill.

TENNESSEE.

Chattanooga—Machine Works.—Messrs. Truxall & Dunmeyer are organizing a stock company to continue the operation of their machine works.

Chattanooga—Foundry.—The Ross-Mehan Brake Shoe Co. will rebuild its foundry, reported in this issue as burned. In the meantime a plant has been secured, and the concern's business will not be interrupted.

Knoxville—Steam Laundry.—F. L. Knight & Co., of Chattanooga, and F. L. Knight and J. A. De Pue, of Knoxville, have established the Star Steam Laundry.

Lewisburg—Woolen Mill.—R. W. West and others intend to establish a woolen mill.

Memphis—Cotton-picking Machinery.—George Lispenard, of Brooklyn, N. Y., and Flonan V. Simmonds and Solomon L. K. Lichens ein, of New York, have incorporated at Trenton, N. J., the Wallis-Lispenard Cotton Picker & Machinery Co. for the purpose of utilizing the inventions of Jas. W. Wallis, of Memphis, and Mr. Lispenard in cotton-picking machinery. The company's capital stock is placed at \$10,000,000.

TEXAS.

Austin—Chartered by Otto Bergstrom, F. M. Covert and E. F. McCarty, the Austin City Cemetery Association, capital stock \$15,000.

Burnet—Granite Quarries.—The Texas Capital Granite Co. has purchased the Westfall, Norton & Laney granite quarries near Burnet for \$250,000.

Corpus Christi—Water Works.—N. Gusselt, C. C. Heath, F. P. McMullen, G. R. Scott and S. M. Leary have incorporated the Corpus Christi Water Supply Co. with a capital stock of \$55,000.

Corsicana—Cottonseed-oil Mill.—The old National Oil Mill has been put in thorough repair and additional machinery put in, and operations will soon commence.

Corsicana—Cottonseed-oil Mill.—The Corsicana Cotton Oil Co. has completed its cottonseed-oil mill. Its crushing capacity is eighty tons of seed daily.

Galveston—Rice Mill.—E. W. Emmons is interested in a project to establish a rice mill.

Galveston—Woodenware Company.—D. F. Beatty, E. H. Poster and J. F. Nadeau have incorporated the North Galveston Woodenware Co. with a capital stock of \$100,000.

Gladys—Manufacturing and Mining.—The Gladys City Oil, Gas & Manufacturing Co. has been incorporated to transact a mining and manufacturing business. Incorporators, G. W. Carroll, G. W. O'Brien, Pattillo Higgins, J. F. Lanier and Emma E. John, all of Beaumont; capital stock \$200,000. The company proposes mining in the vicinity of Sour Weis.

Houston—Bicycle Works.—Messrs. H. D. Spore & Co. intend to establish works for the manufacture of high grade bicycles. A complete plant of special cycle machinery will be installed.

Houston.—The Olivet Cemetery Co. has been incorporated by E. L. Coombs and others with a capital stock of \$30,000.

Houston—Sash, Door and Blind Factory.—R. D. Gible will erect a sash, door and blind factory at Houston. Machinery outfit has been purchased.

Sherman—Cooperage Plant.—The Dallas Cooperage Co. has contracted to supply the Sherman Oil & Cotton Co. with barrels, and will erect a branch plant in Sherman.

Taylor—Broom Factory.—An extensive broom factory will likely be established.

Vernon—Flour Mill and Elevator.—T. M. Kell, R. Hussels and W. G. Curtis have incorporated the Kell Milling Co. to operate a grain elevator and a flour mill. The capital stock is \$50,000.

Waco—Light and Water Works.—The Waco Water & Light Co. will soon make extensive improvements to its water and light systems. Bonds to the amount of \$500,000 will be issued in order to provide the funds.

VIRGINIA.

Buena Vista—Pulp Mill.—The Columbian Paper Co. expects to build a soda fibre pulp mill with a daily capacity of 35,000 pounds.

Courtland—Peanut Cleaning, etc.—A charter has been granted to the Courtland Alliance Pea-

nut Cleaning & Storage Co. with a capital stock of \$50,000.

Danville—Factory.—The Hatcher Plug Tobacco Shape Co., reported last week as incorporated, has organized with C. C. Dula as president; W. L. Gravely, vice president, and H. M. Martin, secretary and treasurer. The company will manufacture the Hatcher tobacco shapes; capital stock \$50,000.

Fredericksburg—Lumber Manufacturing.—A charter has been granted to the Rappahannock Boom & Lumber Co. for the purpose of manufacturing lumber; capital stock \$10,000.

Norfolk—Carriage Factory.—A. Wrenn & Sons will rebuild at once their burned carriage factory.

Norfolk—Real Estate.—The People's Industrial Developing Land Co. has been chartered with a capital stock of \$25,000.

Orbit—Saw Mill.—L. J. Darden will at once rebuild his saw mill, reported in this issue as burned.

Richlands—Roller Flour Mill.—E. R. Houston, of Terre Haute, Ind., contemplates erecting a 50-barrel roller flour mill in Richlands. He proposes organizing a stock company.

Richmond—Manufacturing Meat Juice.—The Valentine Meat Juice Co. has been chartered for the purpose of manufacturing meat juice by Mann S. Valentine's process. Mr. Valentine is president; Graunville G. Valentine, first vice-president, and Edward P. Valentine, secretary; capital stock is \$100,000.

Richmond—Publishing Company.—The Sun Publishing Co. has been chartered to conduct a newspaper and book and job printing office. Mann Page is president, and J. J. Silvey, secretary; capital stock \$10,000.

Saltville—Salt, etc., Works.—George W. Palmer has sold the Holston salt works property to Northern parties for \$1,000,000, and they have chartered the Mathieson Alkali Works to operate same. The new company will manufacture salt, soda, ash, sulphuric acid, etc. Edw. E. Arnold, of Providence, R. I., is president; Geo. W. Palmer, first vice-president, and W. P. Robinson, of Brooklyn, N. Y., secretary, of the new company, and its capital stock is \$2,500,000. A new plant to cost about \$1,000,000 is soon to be erected.

Suffolk—Butterdish Factory.—The Virginia Manufacturing Co., mentioned last week, will also put in new machinery.

Suffolk—Lumber Mills.—Messrs. C. B. Leet & Co. expect to rebuild their recently burned lumber plant.

WEST VIRGINIA.

Beverly—Lumber Company.—George W. Barnard, of Montrose, and others have incorporated the Beverly Boom & Lumber Co.

Bluefield—Water Works.—The Bluefield Water Works & Improvement Co. is erecting an iron storage tank of 250,000 gallons capacity. Ritter & Conley, of Pittsburgh, Pa., have the contract.

Jackson C. H.—Flour Mill.—D. K. Hood & Son are erecting an addition to their flour mill and will put in new machinery.

Kenova—Woodworking Company.—Edward H. Pancoose, Alfred J. Briggs and Hugh C. White, of Riverton, N. J.; Henry D. Goms, of Camden, N. J., and Stacy S. Pancoose, of Kenova, have incorporated the Kenova Lumber & Woodworking Co. with a capital stock of \$15,000.

Sistersville.—I. B. Shufelt and J. E. Chenoriot, of Sistersville, and Hugh White, George Bastable and B. B. Blackford, of Parkersburg, have incorporated the Sistersville Mercantile Co. with an authorized capital stock of \$50,000.

Sistersville—Water Works.—A system of water works will be constructed. J. C. Core, recorder, can give full particulars. Bids are to be received until September 5.

BURNED.

Broadway, Va.—J. M. Hulvey's dry-kiln.

Charleston, W. Va.—The Capital Steam Laundry.

Chattanooga, Tenn.—The Ross-Mehan Brake Shoe Co.'s foundry; loss about \$12,000.

Denison, Texas.—The Denison Light & Power Co.'s gas works.

Little Rock, Ark.—The Geyer Adams Co.'s stave factory and cooperage works; loss \$20,000.

Olive Hill, Ky.—Tabler Bros.' saw and shingle mill; loss \$6,000.

Orbit, Va.—L. J. Darden's saw mill.

Taneytown, Md.—S. F. Baker's coach factory.

AN attractive opportunity for a good mechanic with some capital is offered by the J. H. McEwen Manufacturing Co., of Ridgway, Pa. This company is about to dispose of its patterns and general jobbing trade in order to confine its business exclusively to the manufacture of engines.

BUILDING NOTES.

Asheville, N. C.—Public Building.—W. J. Edbrooke, supervising architect, Treasury Department, Washington, D. C., will receive proposals until September 30 for all labor and materials required for approaches to the United States courthouse and postoffice building at Asheville.

Atlanta, Ga.—Jail.—G. L. Norrman has prepared plans for the new jail for Fulton county. It will cost about \$100,000.

Baltimore, Md.—Office Building.—Lawrence Turnbull will erect a four-story brick and stone office building 52x58 feet.

Baltimore, Md.—Depot.—The Northern Central Railway Co. contemplates the erection of a new depot and plans have been prepared.

Bluefield, W. Va.—City Hall.—C. W. Wilson will submit plans for the city hall lately noted. It is to cost \$7,000.

Bristol, Tenn.—Bank Building.—The Bristol Title, Bank & Trust Co., referred to in last issue, will erect a building to cost \$21,000.

Brunswick, Ga.—Depots.—The Georgia railroad commission has ordered the Brunswick & Western Railroad Co. and the East Tennessee, Virginia & Georgia Railroad Co. (office, Knoxville, Tenn.) to each build a depot in Brunswick, or to jointly erect a union depot.

Brunswick, Ga.—Warehouse.—The Tidewater Oil Co. will build a warehouse. Edward Womack is agent.

Catonsville, Md.—School Building.—Wyatt & Nolting, of Baltimore, are preparing plans for a new building for St. Timothy's School near Catonsville.

Chattanooga, Tenn.—The Southern Express Co. has awarded contract to D. J. Chandler for erecting the office building previously noted. S. M. Patton prepared the plans.

Clarksburg, W. Va.—Depot.—The Baltimore & Ohio Railroad Co. (office, Baltimore, Md.) contemplates building a depot.

El Paso, Texas—Church.—The Catholics will build a \$50,000 church.

Frederick, Md.—Church.—E. M. West has contract for building an edifice for the Christian Church.

Glasgow, Ky.—Bank Building.—Trigg & Co. will erect a two-story bank building.

Hagerstown, Md.—Church.—The members of St. Mark's Lutheran Church will build an edifice 54x41 feet.

Houston, Texas—Hotel, Natatorium, etc.—The Omaha & South Texas Land Co. contemplates building at Houston Heights a three-story hotel with a frontage of 350 feet and two wings to cost \$100,000; also a natatorium and a two-story office building, to have electric lights, etc.

Lexington, Va.—Church.—The colored Baptists will erect a brick church.

Lynchburg, Va.—W. P. Tinsley furnished plans for the five-story business building 55x132 feet for Bell, Barker & Jennings noted in last issue. It will have passenger and freight elevators, steam, heat, etc., and cost when completed about \$25,000.

Montgomery, Ala.—Church.—R. N. McGrath, architect, will receive proposals until October 1 for completing the brick, carpenter, stone and terra-cotta work on the Dexter Avenue M. E. Church South.

Morganton, N. C.—Church.—The building committee of Grace Episcopal Church will receive bids until September 12 for building the new edifice.

New Orleans, La.—Leon Godchaux will erect a five-story brick building to cost \$30,000.

Norfolk, Va.—Depot.—The Norfolk & Carolina Railroad Co. and the Port Norfolk Railroad will, it is stated, build a depot at Port Norfolk.

Orlando, Fla.—Depot.—The Florida Central & Peninsular Railroad Co. (office, Jacksonville) contemplates building a brick depot.

Orlando, Fla.—School Building.—J. C. Evans has been awarded contract for a \$6,000 addition to the city school building. F. J. Kennard is architect.

Portsmouth, Va.—Church.—The Baptists will build a church in Park View.

Portsmouth, Va.—Market-house.—The city clerk will receive bids until September 5 for erecting the market-house and armory building. Carpenter & Peebles, of Norfolk, prepared the plans.

Radford, Va.—Opera-house, etc.—H. N. Austin is preparing plans for the market and opera-house noted in last issue. The cost will be about \$15,000.

Red Oak, Texas—Church.—The church lately mentioned as to be built by the Baptists will be 36x48 feet and cost \$12,000. J. H. Caldwell can give particulars.

Richmond, Va.—Hall.—The Knights of Pythias will erect a memorial hall in Richmond.

Richmond, Va.—Library Building.—Gov. P. W. McKinney will receive proposals until September 26 for erecting the State library building previously mentioned. W. M. Poindexter, of Wash-

ington, D. C., is the architect, and there are \$200,000 available for the work.

Roanoke, Ala.—College.—W. A. Handley invites plans for a two-story brick building 50x100 feet, with six rooms on first floor and a hall above, for the Roanoke Normal College. It is to cost from \$8,000 to \$10,000.

Roanoke, Va.—The Southern Building Co. has been chartered with J. B. Harrell, president, to build houses. The capital stock is \$25,000.

Roanoke, Va.—School Building.—The Board of Public Works will receive proposals until September 16 for all the labor and materials required for erecting the third ward school building.

San Antonio, Texas.—A \$9,000 building will be erected for headquarters at Fort Sam Houston.

Washington, D. C.—A. Lisner will erect a four-story brick and granite business building 100x138 feet.

Wilmington, N. C.—Office Building.—The Carolina Insurance Co., mentioned in last issue, will erect a two-story granite and brownstone office building with plate-glass front.

RAILROAD CONSTRUCTION.

Baltimore, Md.—Electrical Railroads.—The Baltimore, East Baltimore & North Point Railway Co., Daniel Keller, president, and the Baltimore, Canton & Point Breeze Railway Co., Robert Baldwin, president will soon commence building their electrical railroads.

Boggy Tank, Texas—Railroad.—The Missouri, Kansas & Texas Railroad Co. (office, Denison) has awarded contract to Burkitt, Burns & Co. for grading its extension from Boggy Tank to Houston, a distance of eighty miles.

Brunswick, Ga.—Railroad.—The citizens are making efforts to secure the extension of the South Bound Railroad now being surveyed from Savannah to Jacksonville, Fla., built via Brunswick.

Brunswick, Ga.—Railroad.—James H. Fannin, of Atlanta, has, it is stated, obtained the assurance that sufficient English capital will be forthcoming to build the Brunswick, La Grange & Northwestern Railroad when a preliminary survey is made, and he is now securing funds for that purpose.

Erwin, Tenn.—Railroad.—J. L. Cain, of Morristown, vice-president of the Unaka & Nola Chucky Railroad, previously mentioned, reports that negotiations are in progress for building his road by the Nashville, Morristown & Atlantic Railway Co. The road is to run from Erwin to Morristown, a distance of about seventy-five miles.

Galveston, Texas—Railroad.—G. W. Cooley, of Minneapolis, Minn., is investigating at the instance of Northern capitalists the proposed railroad from Galveston to Beaumont, and will make estimates of the cost.

Hazen, Ark.—Railroad.—The Kansas City, Arkansas & New Orleans Railroad Co., previously reported as to build a railroad from Chadwick, Mo., through Arkansas to Bastrop, La., expects to commence work on completing the road from Hazen to Stuttgart within thirty days, and it is stated, has secured sufficient funds to build the road to Fort Smith. George H. Foster, of Beebe, can give particulars.

Houston, Texas—Electrical Railroad.—The Houston Heights Electric Street Railway Co., lately mentioned, was organized by the Omaha & South Texas Land Co. to build five miles of double-track road.

Houston, Texas—Railroad.—The Omaha & South Texas Land Co. has inaugurated a project to build a railroad from Houston Heights to connect with the various railroads entering Houston. About three miles of road and several miles of switches are to be built.

Huntsville, Ala.—Railroad.—The grading of the 14-mile extension of the Nashville, Chattanooga & St. Louis Railroad to the Tennessee river is nearly finished, and tracklaying commences September 1. A. N. Nichols & Co. are the contractors.

Jellico, Tenn.—Railroad.—The Jellico & Bird Eye Coal Co. has awarded contract to the Southern Railway Construction Co., of Chattanooga, for the building of the Jellico & Bird Eye Railroad, lately noted. It will be seven and a-half miles long, and extend through the company's coal lands.

Luverne, Ala.—Railroad.—The Alabama Midland Railroad Co. (office, Montgomery) is reported as to commence the proposed extension of its road south from Luverne.

Mobile, Ala.—Railroad.—The Mobile & Dauphin Island Railroad Co. has, it is reported, commenced building its railroad.

Nashville, Tenn.—Electrical Railroad.—An ordinance has passed the city council granting the Overland Railway Co., previously reported, permission to use electricity as a motive power.

Nashville, Tenn.—Railroad.—The Tennessee Midland Railroad Co. (office Memphis) has submitted a proposition to Davidson county to extend its road from Perryville to Nashville on con-

dition that the county subscribes for \$350,000 of its stock. The road is to be completed and in operation by December 25, 1893, at which time the subscription is payable. The county court will, on September 12, consider the advisability of submitting the question to the voters.

Pensacola, Fla.—Railroad.—The Pensacola Northern Railroad Co. has been organized with Henry McLaughlin, president; L. Hilton Green, vice-president, and C. H. Dismar, secretary. The company has, it is stated, secured the Pensacola & Perdido Railroad, running from Pensacola to Millview, nine miles, and will extend it in a northwesterly direction.

Perryville, Tenn.—Railroad.—It is rumored that Norris Bros., of Pittsburg, Pa., have been awarded contract to build the Tennessee Midland Railroad (office, Memphis) from Perryville to Bristol.

Perryville, Tenn.—Railroad.—It is announced that the Missouri, East Tennessee & Virginia Railroad Co. has awarded contract to A. L. & J. H. Connors & Co. to build its road from Perryville to Newport, and a branch road from Linden, Tenn., to Florence, Ala. The contractors are to locate the line, obtain right of way and build a standard gauge road, using 65-pound steel rails, and to construct all spans of bridges 150 feet in length of iron or steel. They are also to erect all stations, and build a telegraph line along the route. The entire line is to be completed within eighteen months. The railroad company, it is asserted, will use the Tennessee Midland tracks from Perryville to Memphis, and the Memphis & Little Rock to Little Rock, from which point it will build a road to Hot Springs and Paris, Texas. The office of the company is 258 Washington street, Boston, Mass.

Piedmont, Ala.—Railroad.—The Birmingham, Laney & Piedmont Railroad Co. is said to have effected financial arrangements for building its road, and will soon begin work. J. C. Laney, of Laney, Ala., can give particulars.

Portsmouth, Va.—Railroad.—The Portsmouth Park & Development Co. has, it is stated, an engineering corps surveying a railroad from Portsmouth to Gilmerston on the Norfolk & Western. Construction, it is said, will begin as soon as right of way is obtained.

Ross, Texas—Railroad.—The Texas Central Railway Co. (office, Waco) is surveying for an extension from Ross to Waco, a distance of twelve miles. A survey is also being made from Albany, its northwestern terminus, towards the Red river. It is believed that the Texas extension of the Chicago, Rock Island & Pacific will meet the northern extension of the Texas Central.

San Antonio, Texas—Street Railway.—Grigg & Clayton, Room 1, French building, lately noted as applying for a franchise to build a street railway, contemplate constructing four and a-half miles of road to be operated by either steam or electricity.

Savannah, Ga.—Railroad.—The Macon, Dublin & Savannah Railroad Co. has commenced work at Savannah on the extension of its road from Dublin, referred to last week. The work will be steadily carried forward.

Wallhalla, S. C.—Railroad.—R. H. Fitzhugh writes that he has just completed a horseback reconnaissance from Wallhalla to Knoxville and Harriman for the purpose of reporting fully upon this route for the Port Royal Terminal or Chicago & South Atlantic Railroad.

MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Belting.—L. J. Houston, Stockton, Md., will want belting.

Canning Machinery.—The Laurel Canning Co., Laurel, Md., may need machinery later on. Thomas Cronmiller is secretary.

Cars.—W. H. McGoldrick, 319 Sterin street, San Antonio, Texas, wants prices on cars for a standard-gauge electric railroad.

Chain Belting.—The Griffin Agricultural Works, Griffin, Ga., wants chain belting for a cotton planter.

Drilling Machine.—The Cameron & Barkley Co., Charleston, S. C., wants a drilling machine to take 30-inch circle. Address C. B. Jenkins, general manager.

Electric Motors and Plant.—W. H. McGoldrick, 319 Sterin street, San Antonio, Texas, wants prices on eight electric motors for a standard-gauge railroad fifty miles long; also on machinery for an electric-power plant.

Elevator.—Frank Cox, New Orleans, La., wants prices on an elevator.

Elevators.—Bell, Barker & Jennings, Lynchburg, Va., will want one passenger and one freight elevator. Water, steam or electric power will be used.

Engine.—B. Rainey & Sons, Acworth, Ga., will want to exchange their engine for a larger one next summer.

Grinding Machinery.—The Atlas Soap Co. will buy machines for grinding soap powders. Address Charles W. Kennard, secretary, 2313 Barclay street, Baltimore, Md.

Grist Mill.—L. J. Houston, Stockton, Md., will want grist mill runners and fittings.

Heading Machinery.—Todd & Roper, Milan, Tenn., will likely want a heading planer and a heading turner.

Heater.—Frank Cox, New Orleans, La., wants a hot-air heater.

Hose.—R. E. Rose, Kissimmee City, Fla., wants 500 feet of 15-inch canvas hose, with couplings, for conveying dredged material from a 12-inch pump.

Ice Factory.—The Cameron & Barkley Co., Charleston, S. C., wants estimates on a complete ice plant of from ten to twenty tons. State full particulars to C. B. Jenkins, general manager.

Iron-working Machinery.—The Surbridge Manufacturing Co., Hagerstown, Md., wants prices on iron-working machinery; R. G. Surbridge, president.

Lathe.—The Cameron & Barkley Co., Charleston, S. C., wants a second-hand lathe (eight feet). Address C. B. Jenkins, general manager.

Lathes.—The Surbridge Manufacturing Co., Hagerstown, Md., wants prices on lathes; R. G. Surbridge is president.

Lath Mill.—B. Rainey & Sons, Acworth, Ga., will probably want a lath mill.

Locomotive.—The Bradley Fertilizer & Chemical Co., 226 S. Charles street, Baltimore, Md., wants a three foot gauge H. K. Porter & Co. Locomotive, 7x12 cylinder, 10,000 to 12,000 pounds weight, good as new.

Mattress and Spring Machinery.—The D. A. Beckwith Furniture Co., Jacksonville, Fla., is in the market for machines for making wire mattresses and springs.

Mixing Machinery.—The Atlas Soap Co. will buy a sieving and mixing machine. Address Chas. W. Kennard, 2313 Barclay street, Baltimore, Md.

Pipe Machinery.—N. Mackey, San Antonio, Texas, will purchase a sewer-pipe press.

Pulleys, etc.—L. J. Houston, Stockton, Md., will want pulleys and shafting.

Railroad.—W. H. McGoldrick, 319 Sterin street, San Antonio, Texas, wants prices on materials to build fifty five miles of track for an electrical railroad, including quotations on 30 to 70 pound steel rails.

Refrigerating Machinery.—The People's Slaughter-House & Refrigerating Co., New Orleans, La., has extended the time for opening bids for refrigerating apparatus to September 5; Louis T. Dugazon, secretary.

Roofing.—L. J. Houston, Stockton, Md., will want roofing felt.

Saw Mill.—Charles W. Stanton, Mobile, Ala., will need complete outfit (except boilers) for a 50 000 feet saw mill.

Scales.—Henry Popham & Son, East Newark, N. J., want to purchase platform scales.

Shingle Machine.—B. Rainey & Sons, Acworth, Ga., will probably want a shingle mill.

Street Railway.—Grigg & Clayton, Room 1, French Building, San Antonio, Texas, want prices on steam or electric motors, rails, ties, etc., for four and one half miles of street railway.

Water Works.—John H. Buxton, Laurel, Md., will want full outfit of machinery for water works.

Capt. O. M. Carter, Savannah, Ga., will receive sealed proposals until September 10 for constructing a jetty at entrance to Cumberland sound, Ga.

Capt. Phillip M. Price, Montgomery, Ala., will receive sealed proposals until September 20 for dredging in Apalachicola, Fla.

Frank Cox, New Orleans, La., wants opera chairs.

Mr. S. B. Turman, of Tampa, Fla., desires to correspond with some one familiar with water-power.

The Steel Body Buggy Co., of Harriman, Tenn., will buy wheels, springs, axles, etc. Address A. M. Burr, manager.

W. A. Handley, Roanoke, Ala., wants prices of sash, doors and blinds; also on school furniture.

CROOK, HOKNER & Co., of Baltimore, advise us that they have recently placed Ball engines with the following companies: To the Chesapeake Electric Light & Power Co., of Hampton, Va., two compound condensing Ball automatic engines, and to Hotel Rennet, of Baltimore, two Ball automatic engines to be used in their new extension to the hotel.

SOUTHERN FINANCIAL NEWS.

New Banks.

Bristol, Tenn.—The Bristol Title, Bank & Trust Co., referred to in last issue, will increase its capital stock \$50,000 to \$100,000, but the amount has not yet been determined.

Charlotte, N. C.—Heath Bros., lately reported as to convert their bank into a national or savings bank, will not likely make the change before January 1.

Clarksville, Va.—A bank has been organized with a capital stock of \$10,000.

Harrisonburg, Va.—The Rockingham Exchange Co. has been chartered to do a commission and banking business. The capital stock is \$25,000.

Montgomery, Ala.—J. H. Ely, of Union Springs, and associates are reported as to organize a new bank in Montgomery this fall with a capital stock of \$100,000.

Morganfield, Ky.—The People's Bank, lately mentioned, commenced business May 3.

Muenster, Texas—O. E. Powers and E. A. Peizer contemplate establishing a bank.

Orange, Va.—A bank is being organized.

Social Circle, Ga.—A bank has been organized with J. O. Shepherd, president. The capital stock is \$50,000.

Warrenton, Va.—The organization of a national bank is proposed.

Bluefield, W. Va.—The issuance of the \$25,000 of 20 year 8 per cent. bonds for municipal improvements has been decided upon. The mayor can be addressed.

Cordele, Ga.—The issuance of \$10,000 of 6 per cent. 20 year \$100 bonds is contemplated. The mayor can be addressed.

Lexington, Ky.—N. W. Harris & Co., of Chicago, Ill., are the purchasers of the \$105,000 of 4½ per cent. 40-year funding bonds lately mentioned. The price paid was 98½ per cent.

Linden, Tenn.—Perry county will be asked to subscribe \$75,000 in 20-year 6 per cent. bonds to the capital stock of the Tennessee Midland Railroad.

Lynchburg, Va.—The Bonsack Cigarette Machine Co. has declared a quarterly dividend of 2 per cent., payable September 15.

Piedmont, Ala.—The Birmingham, Laney & Piedmont Railroad Co. has executed a mortgage to secure an issue of \$1,200,000 of bonds.

Portsmouth, Va.—E. Thompson, Jr., city clerk, will receive proposals until September 5 for \$20,000 of 5 per cent. 30-year bonds of the denomination of \$500 and \$100; also for \$13,500 of 6 per cent. 10-year \$500 bonds.

Pratt Mines, Ala.—The Pratt Mines Building & Loan Association has been chartered with a capital stock of \$200,000.

Richmond, Va.—The city council has adopted a resolution to issue \$100,000 of 4 per cent. bonds for a street and sewer purposes. The mayor can be addressed.

Rome, Ga.—A movement is in progress to organize a company to issue insurance policies against damage by floods.

Savannah, Ga.—The Investment Land & Loan Co. has been chartered by George W. Lamar, E. F. Bryan, W. G. Charlton and others. The capital stock is \$50,000.

Temple, Texas—B. J. Arnold, receiver of the B. I. County National Bank, reports that creditors are now receiving a first dividend of 30 per cent., and a second dividend of from 30 to 40 per cent. will doubtless be paid by November. It is now believed that all debts against the bank can be paid in full with but a small assessment against the capital stock, and shareholders who are not creditors will get nothing.

Texarkana, Ark.—The National Investment Maturity Co. has been organized with G. W. Hillman, president; W. A. Teague, vice president, and B. D. Ellis, treasurer. The capital stock is \$100,000.

Waco, Texas.—The Waco Water & Light Co. has executed a mortgage with the Knickerbocker Trust Co., of New York, trustee, to secure an issue of \$500,000 of 5 per cent. bonds for improvements.

Wheeling, W. Va.—The Wheeling Railway Co. meets September 3 to consider the issuance of \$100,000 or more bonds and the increase of the capital stock from \$100,000 to \$200,000.

Wilmington, N. C.—The Wilmington Savings & Trust Co. has declared a semi-annual dividend of 3 per cent.

The grinding mills made by the Foss Manufacturing Co., of Springfield, Ohio, are meeting with much favor among soap men. The Christopher Lipps Co., manufacturers of soap at Baltimore, say in regard to the Scientific grinding mill purchased from the Foss company that they take pleasure in recommending it to all soap-makers. The last one they purchased they have used for two years with entire satisfaction, and during that time they have been put to no expense for grinding plates or other repairs.

TRADE NOTES.

THE Carolina Brownstone Co., of Raleigh, N. C., has contracted to furnish the stone for St. Peter's Church in Charlotte, N. C.

C. A. POTTS & Co., of Indianapolis, Ind., have recently shipped a large and complete clayworking plant to Portland, Ore., and another to Kokomo, Ind.

FRANK COX, of New Orleans, La., architect and theatre builder, has the following contracts under way: Opera-house at Thibodaux, La.; remodeling St. Charles Theatre, New Orleans, \$15,000; New Eden Theatre, New Orleans; completion of Masonic Temple and opera-house at Natchez, Miss., \$20,000; stage, scenery and electric lighting of De Giv's new \$125,000 theatre at Atlanta, Ga.

THE Shultz Belting Co., of St. Louis, has just shipped a complete outfit of belting for the shops of the Jacksonville Southeastern Line at Jacksonville, Ill.; also a large 30 inch double belt to Harrisburg, Pa., and a 30-inch double belt to Boston, Mass. The Shultz Belting Co. has the order for a large number of woven leather link belts and flat belts for the Pueblo Smelting & Refining Co., Pueblo, Col.

H. BREWER & Co., of Tecumseh, Mich., manufacturers of clayworking machinery, report a very satisfactory business during the past season, with a largely increased trade in the Northern States. Among recent sales made was a No. 8 mold brick machine to Brundidge, Ala., one to Mobile, Ala., Fort Gaines, Ga., and Greensboro, N. C. They also report orders from Kankakee, Ill., Red Oak, Iowa, and Crowley, La.

THE Berlin Iron Bridge Co., of East Berlin, Conn., will design and build the new buildings for the New Orleans & Carrollton Railroad Co. at New Orleans, La. The power house is 83 feet wide by 130 feet long, with brick walls and an iron roof. The car shed will be built entirely of iron, 130 feet wide by 140 feet long. It is the intention of the New Orleans & Carrollton Railroad Co. to have the finest electric railroad plant in the Southern States.

THE Davidson Ventilating Fan Co., of Boston, advise us that they have just finished the equipment of the Algonquin Club building of Boston with their ventilating system. Extensive improvements have been made in this building during the summer, and the ventilating system put in is one of the most complete in the country. The company has also secured the contract for a ventilation system for Hotel Reynolds, which when completed will be one of the largest and best equipped hotels in Boston.

OAKLEY & KEATING, manufacturers of laundry machines, 40 Cortlandt street, New York, are now furnishing a new equipment for the laundry of the Home for Incurables at Fordham, New York city, and are adding to the capacity of the laundry of the Lawrenceville (N. J.) school. They are now at work installing an extensive laundry plant for the orphan asylum of the Hebrew Sheltering Guardian Society at 150th street and Boulevard, New York city. Besides these they have on hand a large amount of work for hotels and various institutions.

THE Southern Exhaust & Blowpipe Co., of New Orleans, La., has made some extensive contracts during the past thirty days. Among other large lumber and saw mill concerns the following have been fitted up with the machinery of this plant: The Selman Manufacturing Co., at Slidell, La., piping, dust arresters and feeders; the Mt. Hope Lumber Co., of Lake Charles, La.; the Dees Lumber & Improvement Co., of Lake Charles, La.; the Kildare Lumber Co., of Atlanta, Texas, and the Whitecastle Lumber Co., of Louisiana.

THE Rincate Fire-Proofing Co., of Virginia, with office at Richmond, have taken the contract to cover the inside and outside of the large freight warehouse built at Pier 3, Newport News, by the Chesapeake & Ohio Railroad with their fire-proof material. On the outside they will put their paint, and on the inside the "Salamander" covering. The work will cost about \$12,000. This freight warehouse is now under construction by Ross & Sanford, of Baltimore, and will be one of the largest and with the best facilities for handling freight of any in the country.

THE H. Mueller Manufacturing Co., of Decatur, Ill., report eighteen sales of the Mueller water-tapping machine since the first of August. All of these sales were in different places: Harvard, Ill.; Baltimore, Md.; Romeo, Mich.; Minneapolis, Minn.; Rockport, Mo.; Hyndman, Pa.; West Point, N. Y.; Goshen, Ind.; Olney, Ill.; St. Louis, Mo.; Wayne, Neb.; New York city; Chicago, Ill., and other points. This machine is meeting with great favor from water companies. The company also report a fair sale of brass goods, of which they manufacture an extensive line.

THE Berlin Iron Bridge Co., of East Berlin, Conn., are putting up two iron buildings for the

Randolph & Clowes Co. at Waterbury Conn.—one a casting shop 42 feet wide by 82 feet long, and another a pickle room 25 feet wide by 100 feet long. The Berlin company is also building a new gas-house for the Philadelphia & Reading Railroad at Philadelphia, Pa., a new retort-house for the Geo. H. Morrill Co., of Boston, Mass., and a new boiler-house for the Pope Manufacturing Co. at Hartford, Conn. All of these buildings are to be of iron after the well-known plans of the Berlin company.

JOHN C. N. GIBERT, of New York, manufacturer of the swinging hose rack, has during August equipped the following buildings with this necessary adjunct to a hose and fire system: Times building, Richmond, Va.; Chesapeake & Ohio Railway piers at Newport News, Va.; Jeter Female Institute, Bedford City, Va.; Hotel Glenoble, New York city; Hotel New Amsterdam, New York city; Brooklyn Cooperage Co., Brooklyn, N. Y.; Northwestern General Electric Co., St. Paul, Minn.; Hotchkiss School, Lakeville, Conn.; Milford Academy, Milford, Mass., and others.

THE Standard Paint Co., of No. 2 Liberty street, New York, have secured the contract from the Hercules Iron Works, of Chicago, for all the insulating paper and paint for the cold-storage plant the latter company is erecting on the World's Fair grounds. They have also received a large contract from the National Tube Works, of McKeesport, Pa., for their No. 1 P. & B. pipe-coating compound, which is to be used in coating the inside and outside of about 100 miles of pipe which is being laid from Waukesha Springs, Wis., to the World's Fair grounds. Armour & Co. have given them the contract also for about three carloads of their three-ply P. & B. Giant water proof insulating paper which is to be used exclusively in the large building just erected by that company in Kansas City.

PETROS BROS., of Springdale, Ark., have placed their order with Nurdyke & Marmon Co., of Indianapolis, Ind., for additional machinery sufficient to increase their mill 100 barrels over its present capacity. What has been considered the best mill in Southern Illinois—the Pinckneyville Mill, built by Nurdyke & Marmon Co. in 1890—is to be duplicated. This new mill will be located at Murphysboro, Ill., and will also be built by the Nurdyke & Marmon Co. for the Southern Illinois Mill & Elevator Co. It will have a capacity of 250 barrels and will embrace all that is latest and best in milling, from the Corliss power plant on through N. Street & Son, Gladeville, W. Va., have ordered of the Nurdyke & Marmon Co. the complete equipment for a mill to manufacture high grade rye flour, with additional machinery for the manufacture of buckwheat flour on an extensive scale.

OWING to the increased demand for their chain elevating and conveying machinery, as well as their detachable and special chains, the Jeffrey Manufacturing Co. have found it necessary to carry a stock of chains, sprocket wheels, boots and other specialties in the East, and have therefore arranged for office and warehouse at 163 Washington street, New York city, which is located between Cortlandt and Liberty streets. They will occupy their new quarters September 1st, and will be pleased to have their old friends, as well as all users of machinery in their line, call upon them at the above address. The works of the Jeffrey Manufacturing Co. are located at Columbus, Ohio, and consist of a plant of over five acres, most of which is covered by substantial buildings necessary for the manufacture of their machinery. They have now in course of erection a three story brick shop 50x140, and an additional warehouse 40x170. This is one of the best equipped plants in the West for special machinery of their manufacture and an establishment of which the city of Columbus is proud. Catalogues of their manufacture can be had on application.

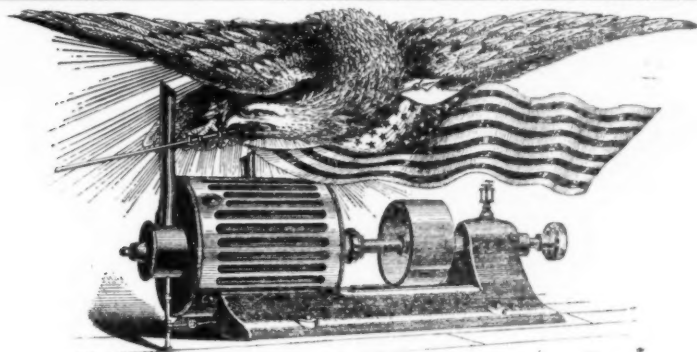
THE Nurdyke & Marmon Co., of Indianapolis, Ind., has completed and put in successful operation the largest and most thoroughly equipped flour mill in the Mexican republic. It is located at Saltillo, the capital of the state of Coahuila. All the work of constructing the mill was done by men sent from here in the employ of the Nurdyke & Marmon Co. An interesting coincidence in connection with this enterprise is that it was on the Fourth of July that Mr. Charles Nurdyke secured the contract for this mill while on an extended trip through Mexico, and that it was on the Fourth of July, one year later, that the mill was started. The mill was started by the governor of the state, who turned the steam on the ponderous engine; then a priest pronounced a blessing on all connected with the enterprise, including the builders and owners and their employees, after which he went through the mill and sprinkled holy water on each piece of machinery. These ceremonies were dignified and impressive in the extreme. When this was concluded the party, including all the dignitaries of the state and the millwrights employed on the job, sat down to a banquet, at which the men for whom the mill was built formally accepted and settled for the entire plant.

Attention, Comrades!

For the Annual Encampment of the G. A. R. at Washington, D. C., September 20, 21 and 22, the Wheeling & Lake Erie Railway has made the exceedingly low rate of ONE CENT PER MILE FOR THE ROUND TRIP, selling tickets September 13 to 20 inclusive, and good for return passage to include October 10. Write to James M. Hall, G. P. A., W. & L. E. R'y, Toledo, Ohio, for copy of G. A. R. guide book, with map of all prominent battle fields of the late war and other information. †

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MACON—Exchange Bank, H. J. Lamar, President; J. W. Caban as, Cashier. Capital and surplus \$550,000.

MACON—First National Bank, J. C. Plant, President. Capital and surplus \$250,000.

SOUTH CAROLINA.

COLUMBIA—Carolina National Bank, W. A. Clark, President. Capital \$100,000.

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D. W. & U. Blacker, Brewton, Ala.
W. W. Weaver, Castleberry, Ala.
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H. C. Higman & Co., Decatur, Ala.
Dunham Lumber Co., Dunham, Ala.
Gadsden Lumber Co., Gadsden, Ala.
Tuscaloosa Lumber Co., Hall, Ala.
Ray City Lumber Co., Mobile, Ala.
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Alabama Lumber Syndicate, Montgomery, Ala.
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W. A. Dives & Co., Montgomery, Ala.
Moore, Kirkland & Co., Montgomery, Ala.
Wagar Lumber Co., Wagar, Ala.
W. W. Wadsworth, Wetworth, Ala.
Arkadelphia Lumber Co., Arkadelphia, Ark.
Empire Lumber Co., Ashton, Ark.
Long B-B Lumber Co., Buckner, Ark.
Cotton Belt Mill Co., Cotton Belt, Ark.
Eagle Lumber Co., Eagle Mills, Ark.
Red River Lumber Co., New Lewisville, Ark.
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Wilson Coal & Lumber Co., Atlanta, Ga.
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Charles Bewick & Co., Hazlehurst, Ga.
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D. Goulet & Co., Black Rock, Ark.
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Camden Shingle Mill Co., Camden, Ark.
Price Lumber Co., Paragould, Ark.
Creary & Ollinger, Bagdad, Fla.
A. L. Wellman & Co., Beresford, Fla.
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W. Springstead & Son, Brooksville, Fla.
Mearns Shingle Mill, Davenport, Fla.
Wm. A. McCann, Jacksonville, Fla.
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Little & Chapman, Rosewood, Fla.
Atlanta Lumber Co., Atlanta, Ga.
P. G. Grant, Atlanta, Ga.
T. E. Collier, Cordele, Ga.
King & Bursch, Hawkinsville, Ga.
Varbrough & Perry, Fullington, Ga.
Ino. Akers & Co., Scotland, Ga.
Baily Bros., Toccoa, Ga.
Mayfield Shingle Co., Wishart, Ga.
Worth Lumber Co., Worth, Ga.
G. W. Clere, Coaltown, Ky.
Monroe Smith, McKiney, Ky.
The J. H. Poe Shingle Co., Lake Charles, La.
Harris & Thornton, Chattanooga, Tenn.
L. Miller Shingle Co., Orange, Texas.
Kizer Lumber Co., Texarkana, Texas.
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Gurley & Rogers, Norfolk, Va.
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Paducah Handle Works, Paducah, Ky.
Hendersonville Mfg. Co., Hendersonville, N. C.
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C. J. Dundas, Statesville, N. C.
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Southern Real Estate Directory.

For the convenience of the many readers of the MANUFACTURERS' RECORD it has been deemed advisable to collect under this head a reliable list of Realty Agencies of the Southern States. The value of such a list for the purpose of Ready Reference will immediately become apparent to all who are interested in the growth of this section.

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TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., August 24, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 20th day of September, 1892, and opened immediately thereafter for all the labor and material required for the approaches to the United States Court House and Postoffice building at Asheville, North Carolina, in accordance with the drawing and specification, copies of which may be had on application at this office, or the office of the Superintendent at Asheville, N. C. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked Proposal for approaches for U. S. Court House and Postoffice Building, Asheville, N. C., and addressed to W. J. EDBROOKE, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., August 22, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 17th day of September, 1892, and opened immediately thereafter for all the labor and materials required for furnishing and fixing in place complete, the Low Pressure Return-Circulation, Steam Heating and Ventilating Apparatus for the U. S. Custom-House, Postoffice and Courthouse Building at El Paso, Texas in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at El Paso, Texas. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any and all bids, or to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals must be enclosed in envelopes, sealed and marked "Proposal for the Low-Pressure, Return-Circulation, Steam-Heating and Ventilating Apparatus for the U. S. Custom-House, Postoffice and Courthouse at El Paso, Texas," and addressed to W. J. EDBROOKE, Supervising Architect.

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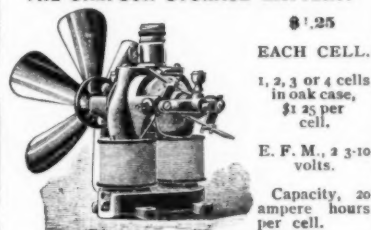
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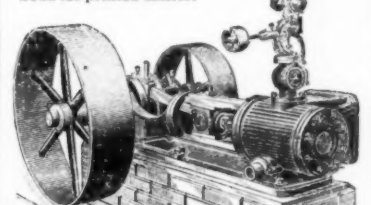
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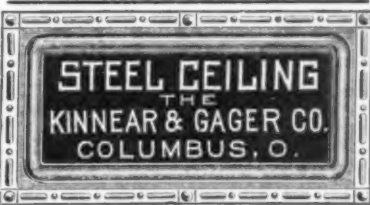
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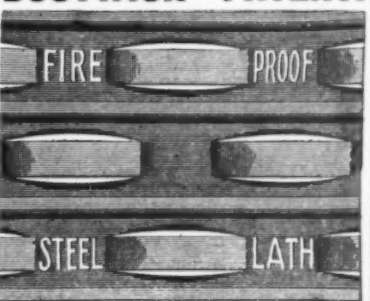
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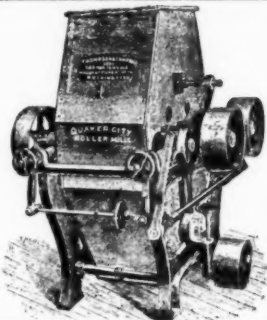
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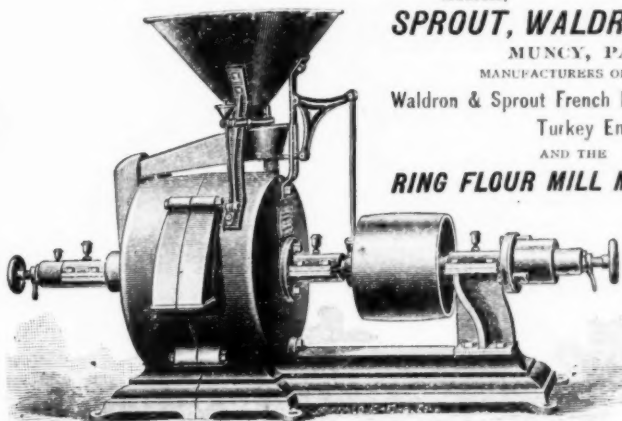
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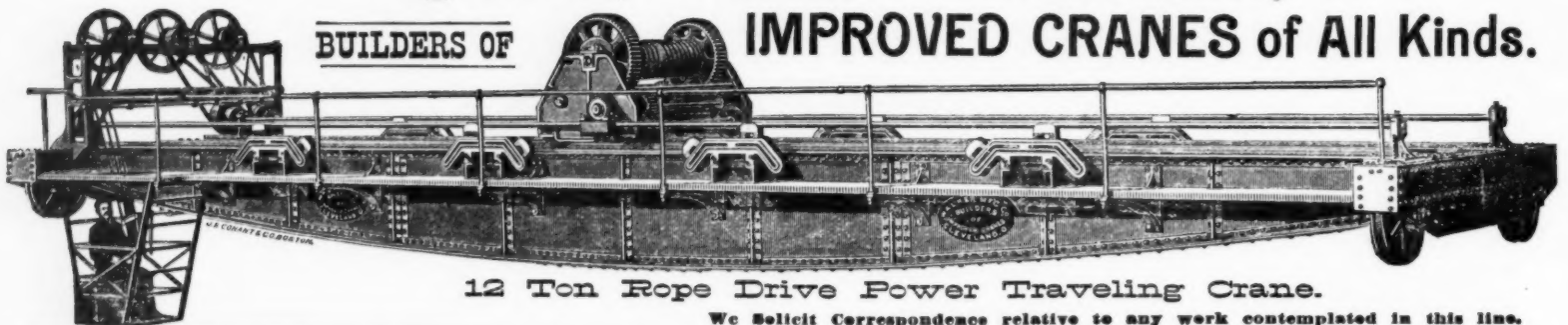
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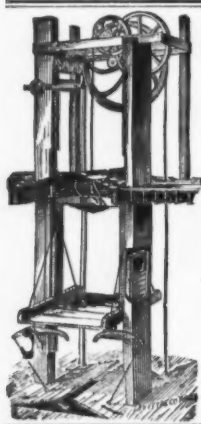
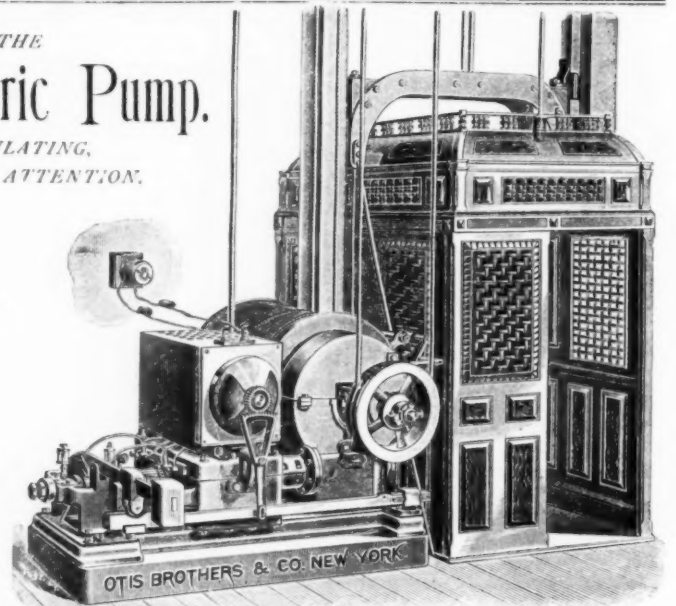
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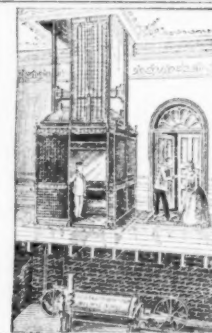
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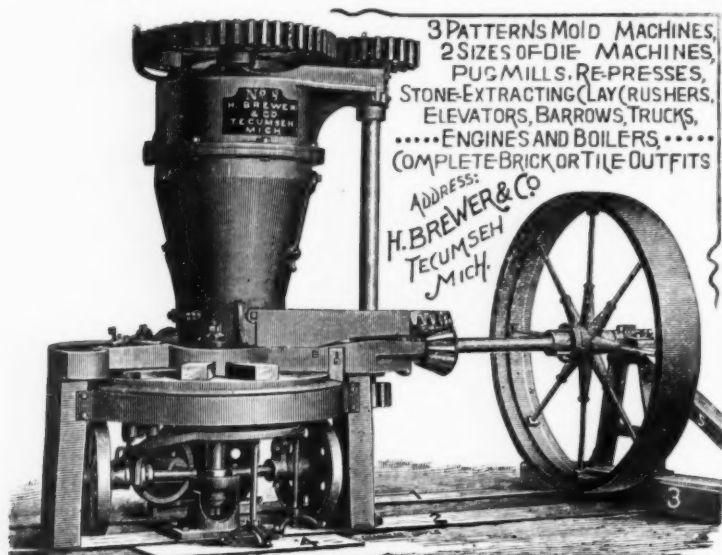
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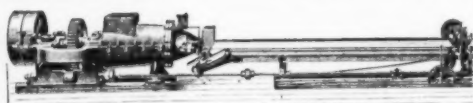
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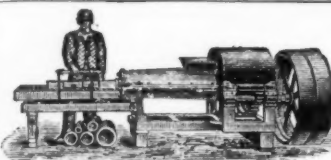
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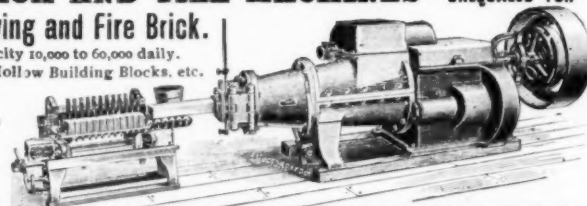
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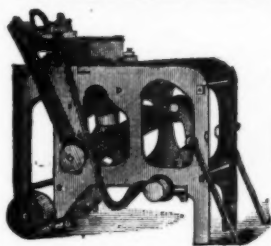
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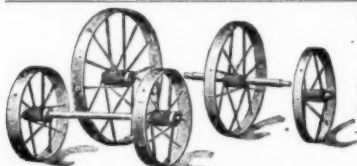
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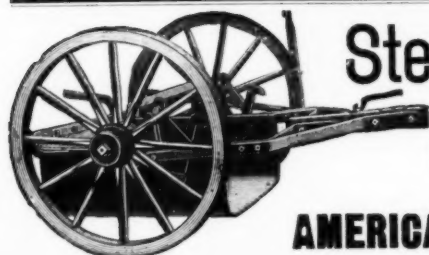
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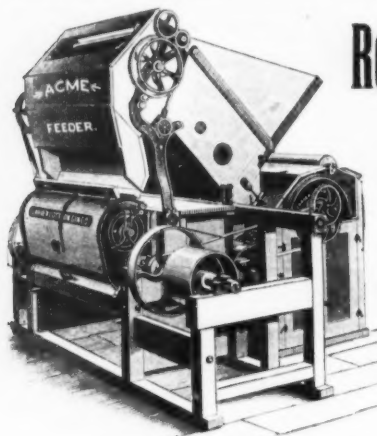
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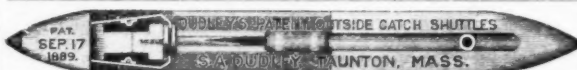
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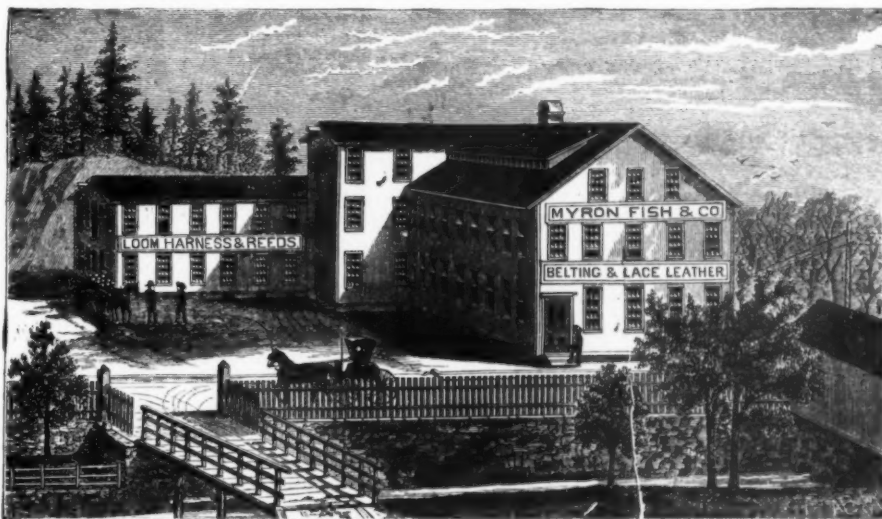
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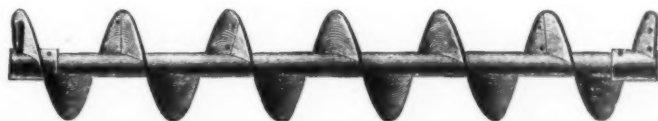


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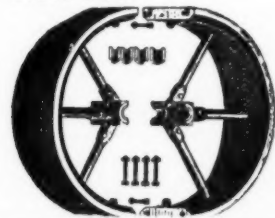


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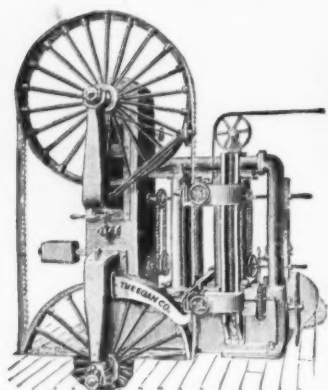
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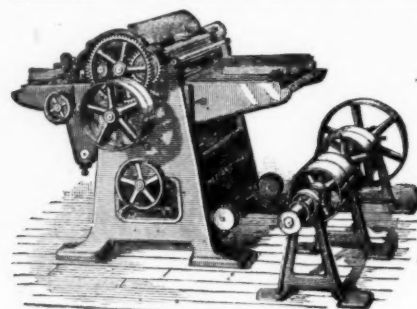
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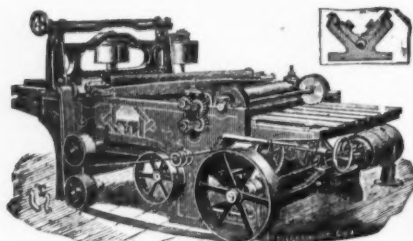
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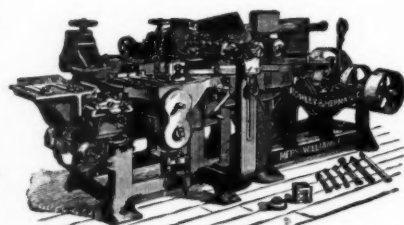
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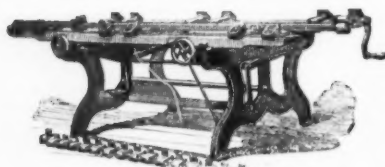
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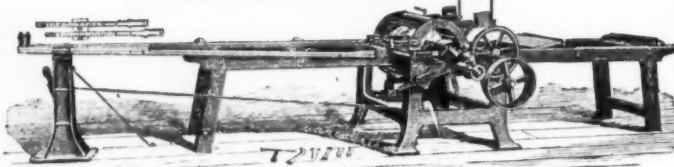
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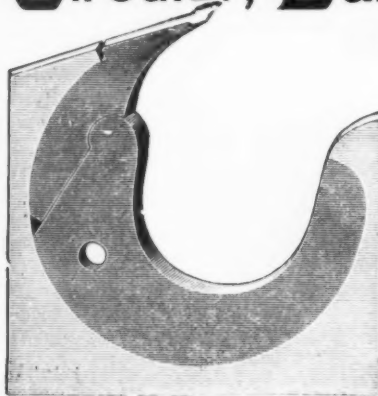
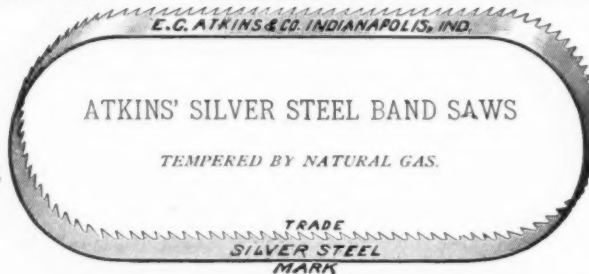
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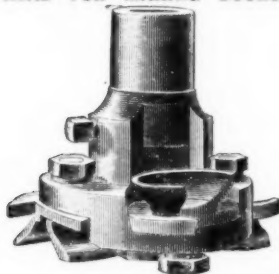
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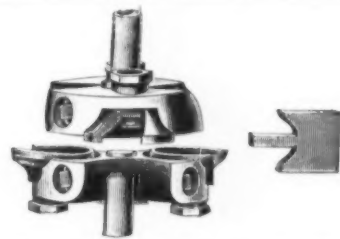
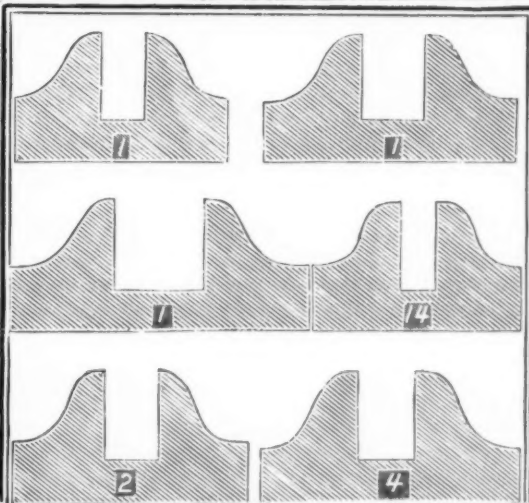
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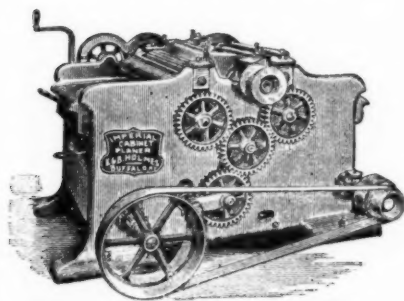
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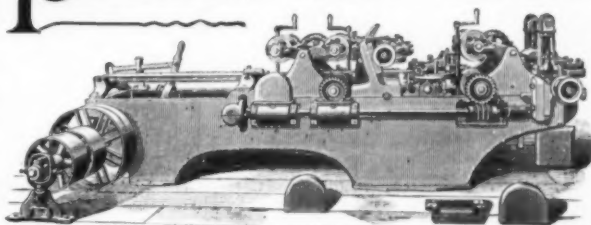
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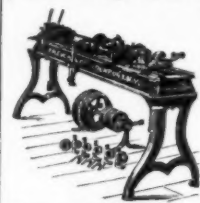
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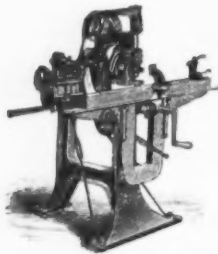
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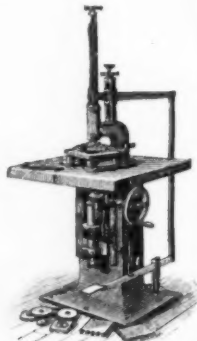
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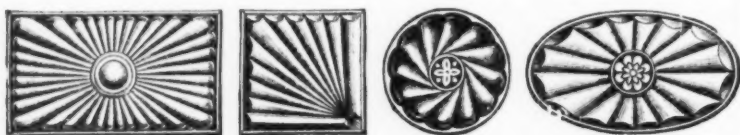
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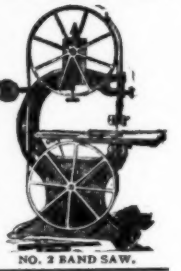
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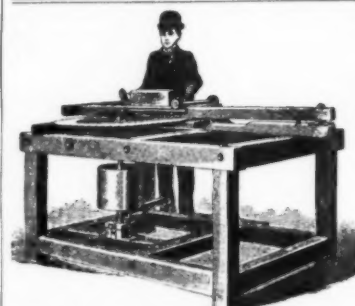
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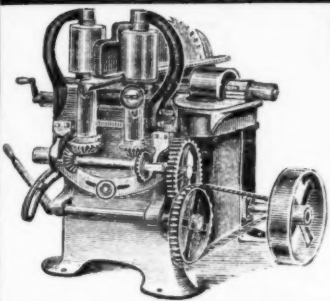
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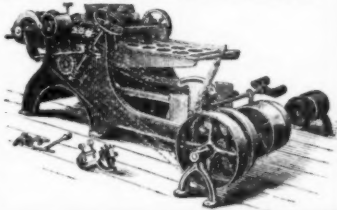
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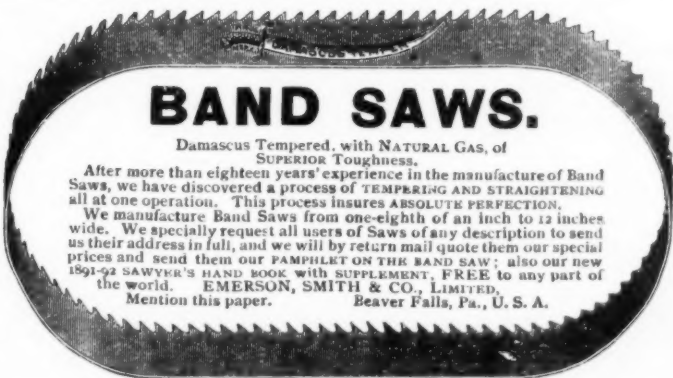
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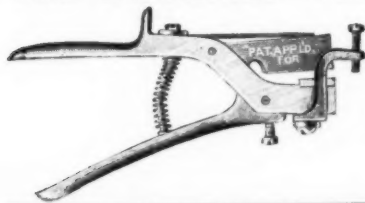
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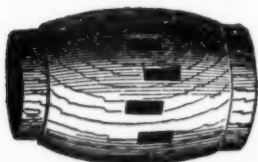
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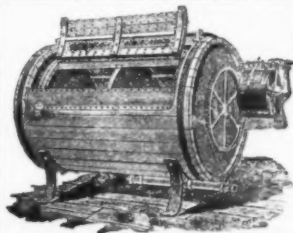
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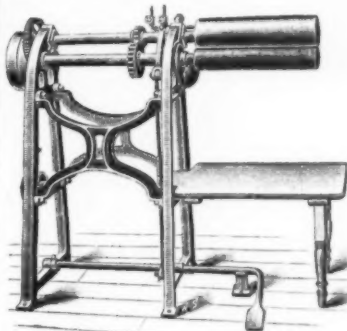
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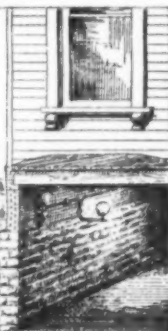
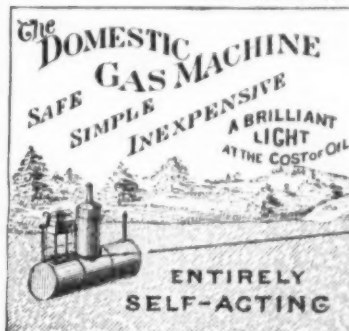
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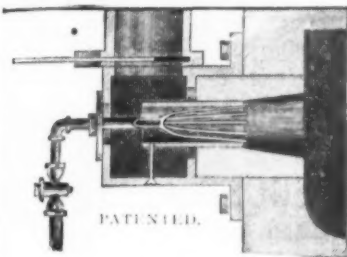
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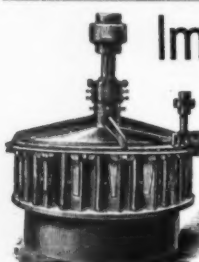
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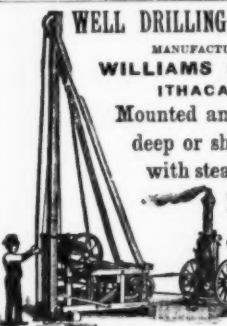
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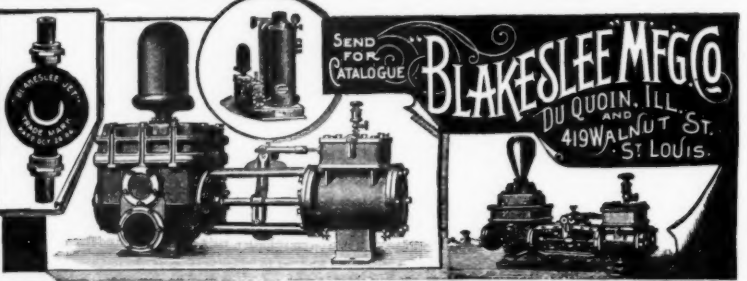


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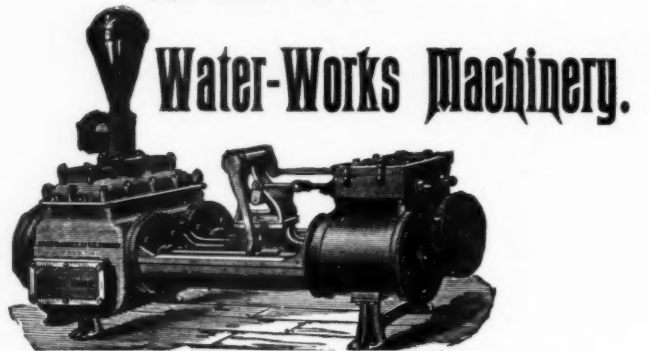


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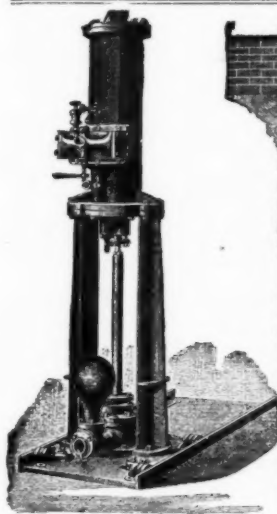
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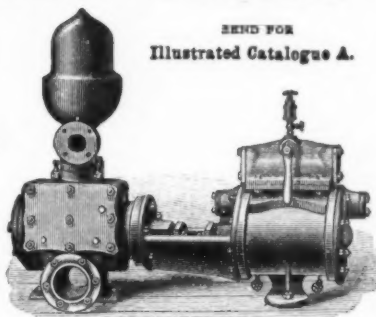


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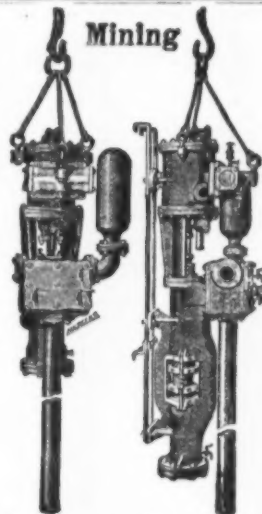
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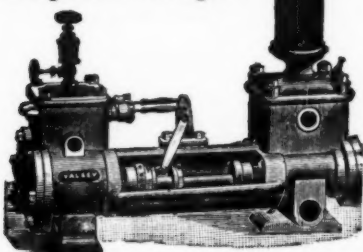


Mining

Platen Pattern.

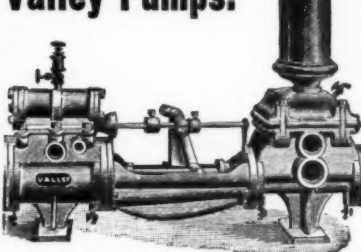
Plunger Pattern.

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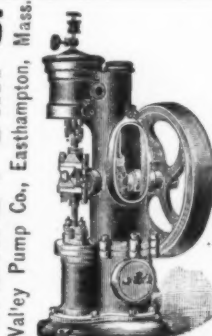
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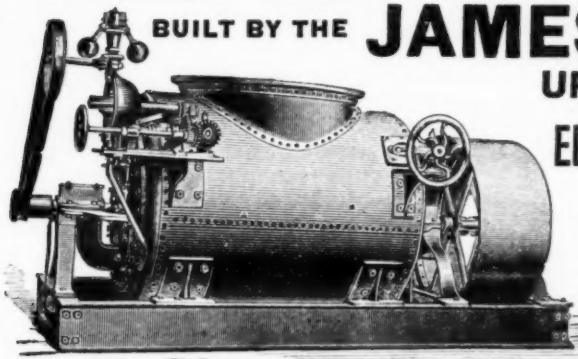
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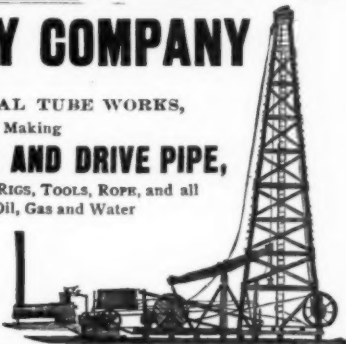
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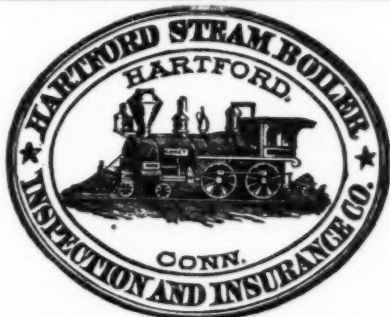
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NORTH WILKESBORO,

NORTH CAROLINA,

One of the Conspicuous Successes of the Year in Town Building.
Presents the Following Record:

Population March 4, 1891, actual count, 48.

Population March 4, 1892, actual count, 348.

Gain in one year 625 per cent.

Townsite purchased November 11, 1890; act of incorporation passed by the Legislature, March 4, 1891; first lot sold at private sale, May 12, 1891. Within the first year of its existence ten miles of streets have been graded, and \$22,000 spent in public improvements. Where prior to March 4, 1891, there was only a farm settlement without pretensions to being even a village, there is to-day a thriving, busy, growing, trading and manufacturing center, with

A Large Well-Kept Hotel,
The Bank of North Wilkesboro, \$40,000 Capital,
A large Livery and Sale Stable,
Two Large Wholesale Stores,
One Hardware Store,
One Furniture Store,
Ten General Merchandise Stores,
Three Saw Mills, Sash and Blind Factories,
One Foundry and Machine Shop,
A Handsome, Well-Edited, Home Print Newspaper, The North Wilkesboro News,
One School,
Two Churches Under Way,

Two Brick Yards in operation, and a number of other enterprises practically secured.

Arrangements are about completed for a Woollen Mill.

A large iron front brick block, containing Bank Building, two Store Rooms, Opera House, and Printing Office; A graded School Building and an Iron Bridge across the Yadkin River, in the Eastern part of town, will be completed during the spring and summer.

Turnpike roads to Tennessee and Virginia are about completed; county roads leading into town are being improved and numerous good new ones built, with the intention of making this the center for all the wagon trade of this section.

A tobacco warehouse for the sale of the high grade leaf of this district will be built during the summer, so as to give a home market for the tobacco crop that will be grown this year.

Compare this record with that of any other new town you have heard of during the past dull season.

NORTH WILKESBORO,

Is 75 miles west of Winston-Salem, at the present terminus of the Northwestern North Carolina Railroad, which when ultimately completed to Bristol, Tenn., will give the shortest route between Norfolk and Cincinnati. North Wilkesboro is the most important trading point between Winston-Salem and Bristol, and is in the center of the great undeveloped mineral and timber district of Northwestern North Carolina, being by United States Postal Map on an air line 75 miles southeast of Bristol, 45 miles east of Cranberry, N. C., 40 miles north of Statesville, 45 miles northeast of Hickory, 90 miles northeast of Asheville, 45 miles southeast of Mt. Airy, and 80 miles south of the Norfolk & Western Railroad, in the valley of the Yadkin, between the Brushy Mountains on the South and the Blue Ridge on the North. Climate, healthfulness, water, drainage and location unsurpassed by any town in North Carolina.

The townsite consists of 1,088 acres, located, by the way on a farm originally owned by General John B. Gordon's grandfather. The first public auction sale of lots was held December 2, 1891, and 188 lots were sold. Purchasers have in many cases been able to resell at a handsome profit. The company has sold 50 lots at private sale since then, on many of which houses are now being erected. It is a significant fact that among the business buildings erected a large per cent. are substantial brick structures, while for architectural beauty and cost many of the residences are much superior to those usually found in a town so young.

At the second auction sale, May 11th, 1892, 35 business lots and 44 residence lots sold for \$16,490, an average of \$8.35 per front foot, which is \$2.53 per front foot (or 44 per cent.) more than the average at the sale last December, which was the best sale made in North Carolina during last year. Since the sale, a contract has been closed for the location of another large saw mill, planing mill, sash, door and blind factory combined, which will do a large shipping business. A contract is closed for the location of extract works with a capital stock of \$300,000. The plant will cost \$125,000 and will cover six acres of land. Twelve families from the North will move down. The company will erect a large electric-light plant in connection with the extract works. North Wilkesboro will get there and will not be long doing so.

Through the townsite runs a stratum of serpentine stone, 200 feet in width, and also a bed of iron ore equal in quality to that of Cranberry. The Town Company also owns 4,100 acres of mineral, granite and timber lands in Wilkes County. It is probable that the work of developing the great mineral and timber interests of the section will be commenced in a short time, and on an extensive scale.

Sites will be donated and stock subscribed to such manufacturing enterprises as may be advantageously located here.

The policy of the Company is a most liberal one in this respect, it being determined to aid all legitimate enterprises to any reasonable extent. There are 328 miles of water courses within the borders of Wilkes County, furnishing to the vicinity of North Wilkesboro a water power as great as Fall River. The climate, while not moist, is neither harsh nor dry, and is especially suitable to the spinning of fine cotton yarns, such as cannot be made in the extreme South or North. There is also a fine opportunity here for bleacheries, to the establishment of which at Southern points there is a tendency at present. As they can't go where sluggish streams, impregnated with vegetable matter, abound, the quick flowing streams of clear mountain water, so numerous about North Wilkesboro, afford everything desired. Numerous other industries will do well at North Wilkesboro, and will be most substantially encouraged to locate there.

Capitalists, Home Seekers, Health Seekers, Manufacturers of wood and iron, and many other industrial workers may well investigate North Wilkesboro's advantages.

The above-described townsite and other property belongs to the Winston Land & Improvement Co., which was chartered by act of Legislature, session of 1887; ratified March 4, 1887, chapter 82. Authorized capital \$1,000,000. Present capital stock \$125,000, all subscribed and paid up.

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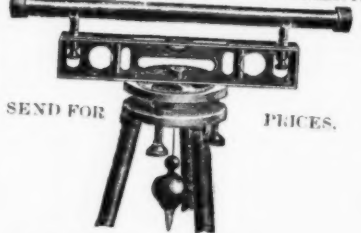
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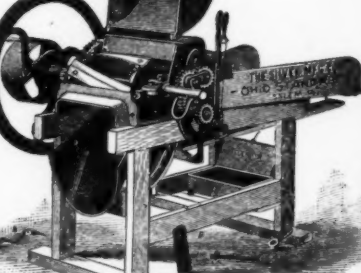
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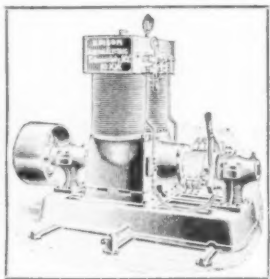


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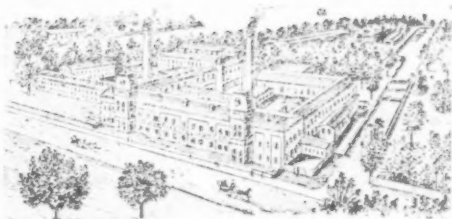
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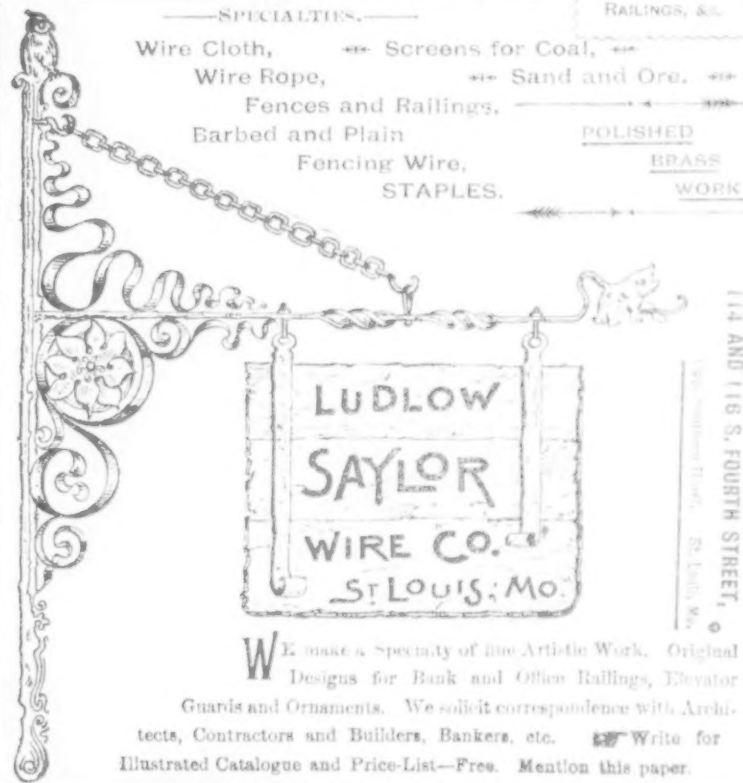
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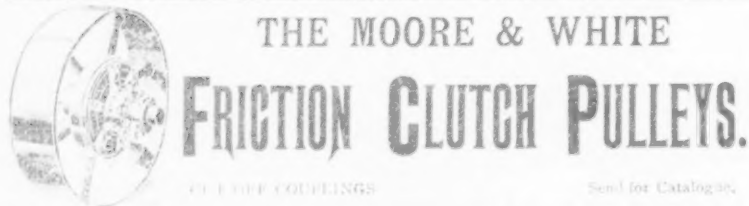
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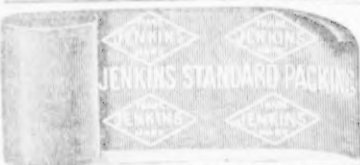
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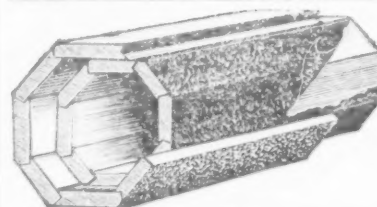
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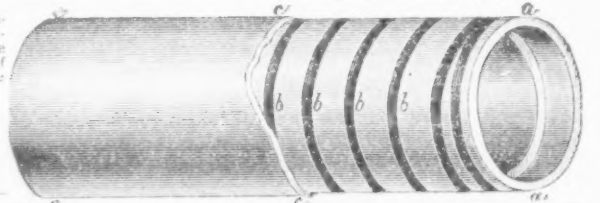
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